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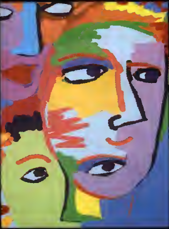

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In 10 years our kids are going to say 'There was a time when computers could not read, talk, and see.'

— *Bill Gates, CEO, Microsoft*

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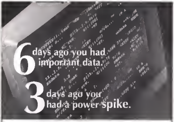
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Don't buy a Web TV

If Statistics Canada is correct and only 10 percent of the Canadian public is logging on to the Internet from home, then the computer industry has done a rotten job of getting people wired despite all the hype. At the recent Comdex trade show in Las Vegas, vendors such as Sony, Philips, Apple and others were lining up to sell $300 to $500 black boxes designed to get you surfing the Web with your TV.

TVs aren't computer screens.

I admit it, I am biased. We are a computer kind of family. In my household, TVs aren't for interactivity, they are for vegging out in front of. When my son was young he had an 8-bit Nintendo game. We used to regularly battle him for the use of the TV because he wanted to play a game and we wanted to watch a video.

They don't call computers personal computers for nothing. The whole thing about interactivity is that my interactivity is not likely to interest my wife or my kids and vice versa. Web surfing seems like an inappropriate family activity. Think about when you have to share a newspaper with someone else. How often are you turning the page when the other person wants to keep reading, or vice versa? People read at different rates and have different interests. Even beyond these basic individual differences, here is why I think you might not be happy with what you get from these little black Web TV boxes.

Your first problem in surfing the Internet from your television set is screen resolution. Mel Gibson and Demi Moore might look great on your big screen TV but the text from the Internet looks lousy on the screen resolution of most television monitors. To their credit, WebTV units from Sony and Philips seemed to do a reasonable job of using large readable fonts to keep text readable. Not all units I saw looked this good.

These black box units are non-standard. Different vendors are using different operating systems and software on them. WebTV and Diba were two popular brands around the Comdex show floor. They seemed well supported at the show but in the fast moving consumer electronics field, this year's hot product is often in next year's remainders bin and development ceases. Because the Internet is changing so fast, you want to know that the product you buy will be supported well into the future. With PCs, you have more of a known quantity. With Web TV units, it is a new universe and no one can guarantee at this point which units will take off.

Limited upgradablity

Many of the units seemed to have only limited upgradablity. Because they were designed to be very simple, you could not add memory or hard drives to most. The Apple @World Pippin, which was based on the Mac Operating System, was the notable exception. The problem I saw with the Pippin was that, although you can run Pippin titles on a Mac, you could not go the other way round and run Mac titles on a Pippin. I am not quite sure who dreamed up that strategy, but it does not seem like a good one to me.

The lack of local hard drives on Web TV appliances means that the consumer becomes dependent on an external service to store the information that they create and capture. The WebTV units I looked at from Sony and Philips would not allow you to select your own Internet service provider. Because of the proprietary interface, you had to use a specific vendor, which may or may not have competitive pricing now and in the future.

Some of the wizzy new software ideas from the Internet won't work on them. Sure, if written in Java, it will probably work, but many of the cool new things on the Internet are coming from small companies using non-standard approaches. Things like RealAudio, QuickTime, VRML, etc. are all here now for Macs, PCs and many Unix boxes, but will they be there for your little black box? Will that little black box have the memory to run them? Will you be able to add more memory? Will it cost you and arm and leg because it is proprietary memory?

The biggest problem I see with these Web TV devices is that they are aimed at the Internet, which is still very much a moving target. My computer can adapt and grow as the Web changes. I can add inexpensive RAM and hard-drive space, even upgrade my processor speeds as the need arises. It seems too early to me to create a lowest common denominator platform like these represent.

We have been down this road before, and I am here to tell you it ain't worth it. I predict that, after an initial flurry of use, they will end up in the closet like the early Commodore 64 computers with many unhappy purchasers. I stand to be corrected by massive sales of these units, but for my money I'd buy an inexpensive computer instead. For as little as $1,200 you can have a computer capable of not only surfing the Web but also charting spreadsheets, desktop publishing, playing 3D games and creating databases.

Internet for Grandma

One cool device that I saw at Comdex that did seem worth considering was from Uniden, a telephone manufacturer based in the United States. I liked these units, because simple e-mail is fairly standard. Text based messages can do the job for most people right now. Uniden used OS9 to create a POP compliant e-mail phone. This striking looking unit is predicted to be available early in 1997 and sell for about $300 for a one-line cordless phone version.

It is about the size of a small thermal fax machine. The lid flips up to reveal a small keyboard and screen, with which you can do the basics of e-mail. It only does text-based e-mail and cannot handle any file attachments, but it is always on (no boot up time) and can be set to poll your mail server at whatever interval you set it to. I think I have finally spotted a way to get my computer-reluctant mother on e-mail. Three numbers to program and five bucks a month for an e-mail-only account—this seems like a dream unit.

The rest of this issue is packed with information and ideas to ease the pain of choosing and getting up to speed on a new computer. If you are already there, we encourage you to pass this copy around to your friends who want to get wired.

Enjoy the issue.

Douglas Alder
Editor/Publisher

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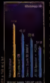

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32 pin SIMMs rare but real

I recently tried to upgrade the RAM (from 8 MB to 16 MB) on my four-year-old 486-33 and discovered I had 32-pin, 1 MB SIMMs. The stores I have checked with only carry 30-pin or 72 pin SIMMs. Do you know of anywhere I might obtain 4 MB, 32-pin SIMMs?

Also I have heard rumors that I would be able to use 30-pin SIMMs in place of (or in tandem with) my old 32 pin SIMMs. Can you either substantiate this claim or refute it?

Jeff Wood, via Internet

GB replies Never having actually seen 32-pin SIMMs myself I did a search on the Internet and found 104 people having the same problem you're experiencing The closest to a definitive answer seems to be that IBM on some PS/2 models and AST on some models used proprietary 32-pin SIMMs, which cannot be interchanged with standard 30-pin SIMMs

Your options seem to be limited to contacting the manufacturer to see if it still carries the kind of SIMMs you need, or scour sources for used computer parts

Please test motherboards

I really wish *The Computer Paper* would test out the wide range of Pentium motherboards that are available on the market.

Eddy Lau, via Internet

CF replies Testing motherboards is something we have been considering for quite some time We have at various times planned to do this and then put the project on the shelf Testing motherboards is an extremely labor-intensive undertaking, as there are a lot of different brands and each motherboard needs to be setup with identical components before it can be benchmarked I suspect that we will get to it in the future but not in the next few months

And if not motherboards, then honkin' fast systems

I think that you should do ratings on some high-end Pentium or Pentium Pro 200 systems Right now I m looking for a really high end system, and I want to know what would be the best configuration and when would be the right time to buy

Sean Fraser, via Internet

SH replies The Test Lab in our February 97 issue will feature high-end systems of the Pentium 200 MHz variety Keep an eye out.

OS/2 did it first

I do hope Ross Macdonald was pressed for time on his "Looking forward to backing up" article in the November *TCP*, because otherwise I'd have to attribute this to either shoddy research or the all-too-common journalistic inability to see anything outside Microsoft's little realm

Mr. Macdonald in writing about using large-capacity flopticals for backup targets, states that "there's no software yet to allow a backup to a PD in the sense that we normally think of a backup – the PD won't recognize any existing back-up utilities that compress or automatically schedule or incrementally save, or any of that other neat backup stuff "

Maybe not in the DOS/Windows world

Symmantec Fastback Plus for OS/2 on the other hand has a few unique abilities. Besides the usual compression, scheduling and incremental backup functions it supports four types of backup devices. standard floppy disks floppy-connected QIC tape drives SCSI tapes drives and a little thing called "system devices "

A system device in Fastback/2 can be any drive with a recognizable drive letter removable or fixed. local disks, network drives, ZIP and JAZ disks and as long as a PD drive can be given a drive letter under OS/2 Fastback/2 should be able to nicely back up to that as well (if someone would be kind enough to send me a PD machine and disc I'll be happy to put this to the iron test) Just peel off a new system device template open the Settings/Properties select the PD's drive letter on the "Path" notebook page, and you're off to the proverbial races. Works like a charm with my ZIP drive and if I'm really in a weird mood I can even create a system device for my RAM disk

Just for the record, BTW Fastback/2 has had this ability for a couple years now. Of course I expect no one will care until Microsoft comes out with something similar for Windows <insert year>, at which point it will be touted as the greatest thing since sliced 8-inch floppies

And while we're on the subject of OS/2 . . .

I find it very disturbing the type of coverage you gave OS/2 Warp 4 0 in your October issue of *The Computer Paper* There were only two half-page columns pertaining to it's release, whereas one year ago when Windows 95 was released (August '95) the front page of your paper was a full-page Windows 95 logo And there were four to five pages of columns pertaining to it's release

Has the media influenced your paper so much that everything in your paper is either Windows 95 or it doesn't make the press?

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Also, I would even be surprised to find a column about the widely anticipated—amongst expert computer users and ISPs—release of Linux 2 0 (aka Linux 96). What has happened to one greatest computer papers? Has the media taken it over? Appears so.

Michael Thorndyke

To thine own eyes be true

In *TCP*'s November Lab Test on color inkjet printers, you rate the Canon BJC 4100 Since then the Canon BJC 4200 has come on the market and I was wondering how you rated it I went to a retail store to check out their printers and compared the Epson Stylus Color 500 Canon BJC 4200 and the HP 680c They had samples on the same paper, same resolution and same picture. To my eyes, the Canon BJC 4200 was the winner Please let me know your comments

Arthur Owen

DT replies We have yet to test this new Canon model However each one of these brands has a good share of the market and many satisfied users Sometimes, after all the measurement are taken and the tests run subjective experience is the deciding factor so if it looks the best to you, that should be a factor in your buying decision as much as the performance figures

Where's the one-line, many-devices piece?

In your November '96 issue a letter from Glenn McCauley refers to an article "One phone line so many devices" in *TCP*, November 1996 I have been trying to find this article in online past issues (I assumed the above reference is incorrect, since the letter was in fact in the November '96 issue) and have been unsuccessful

Please let me know where I can find this article if it is available

Al Mallory

DT replies We received a lot of comments on this article, which unfortunately, did not make it into the Prairie and Eastern editions because of space limitations

The article date cited in the November letter is wrong, as you correctly presumed In fact the article appeared in the October 1996 edition An online version is available at our Web site at http://www.tcp.ca.

Don t pun-ish me with your heads, or complaint letter #53

If most of your readers are like me, we're quite tired of being barraged by all of the "cute/witty" titles found everyday in newspapers, magazines computer papers, etc.

Putting an end to these titles would save your writers/editors the time of dreaming up the literary gems and it would spare your readers the time to figure out what they mean

From your Nov issue-

As printed	How about
Scanning the horizon	Scanners
The virtual paper chase	Document imaging
Computer read this page	OCR packages

In most cases, simply reversing your first bolded title with your second line of description would make a world of a difference Be as cute as you want in the second line but not the first please

By the way you have a great computer paper going for you apart from this. Keep up the good work!

Eric Greenspoon via Internet

Canon corrections

With regard to our November '96 Test Lab on inkjet printers, Canon has asked us to note the following Although the Web address we had listed at http://www.canon.com was correct for the company, they also maintain a site that links you directly to their computer-related product line This can be found at http://www.ccfi.canon.com Also, we've been recently informed that the neon inks that were mentioned in the article for the Canon printer(s) are available only in the United States Please take note of the following corrections as well, which were errors on our part: the warranties on the Canon 240 and 4550 models are for one year only and the correct toll-free number for Canada-wide support is 800-263-1121.—*SH*

Payroll survey information missing

In our December '96 Annual payroll survey we inadvertently left out the contact information for the Paymate program. Paymate is from:

AK Microsystems
245 West Beaver Creek Rd , Suite 9b
Richmond Hill Ont. L4B 1L1
phone 905-771-1155
fax 905-771-1344
toll free fax 800-263-3795

We extend our apologies to AK Microsystems for any inconvenience this may have caused.—*DT*

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WHAT'S NEW

Kodak launches new digital camera • In the continuing fight for supremacy in the digital camera wars Kodak has launched another salvo against the competition with the introduction of its DC25 Digital Camera. A camera aimed primarily at the home-user this low cost successor to the DC20 digital camera contains more features that both Macintosh and PC owners can use.

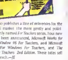
Digital cameras snap pictures without film—the image is captured on a digital microchip which can then be downloaded to a computer. Once transferred, the image can be edited and then used in such things as presentations, e-mail and Web pages.

This 13x4x7 cm (5.1x1.6x2.8 in.) 270 g (9.5 oz.) camera can shoot pictures in two resolution modes—high (493x373 pixels) and standard (320x240 pixels)—in 24-bit true color. The DC25 is the first Kodak camera to feature an LCD viewfinder. Its 4 cm (1.6 in.) color screen allows the user to see exactly what the camera sees before taking the picture. It comes with 2 MB of internal memory which can store up to 14 high-resolution or 29 standard resolution pictures. The camera also supports Kodak CompactFlash memory cards so once the camera is "full," you can replace the current memory module with another to keep on shooting.

The DC25 is a point-and-shoot camera, with a focus-free lens and automatic flash for taking pictures both indoors and out. Users can also review the past few pictures on the LCD screen and then decide to save or delete them. Kodak Picture Easy software is included with the camera. The suggested list price for the DC25 is $695.—*KS-R*

Contact: Kodak Canada Tel 800-465-6325
Web site http://www.kodak.com/

More For Dummies in 1997 • IDG Books Worldwide, which publishes the fantastically popular *For Dummies* series, has announced their latest editions to the line including *Microsoft Office 97 For Windows For Dummies, Word X For Windows For Dummies, Excel X For Windows For Dummies*, and *Access X For Windows For Dummies.* Pitching the *For Dummies* line as "a reference for the rest of use," John Kilcullen, the creator of the *For Dummies* franchise, has selected writers for their combination of technical expertise and the ability to organize information effectively and to communicate in plain language that the ordinary PC user can understand. For even quicker comprehension and access to information, IDG also publishes a *Quick Reference* line of books aimed at providing the most commonly used features of these programs explained step by step. The *For Dummies* titles sell for $26.99 each and the *Quick Reference* versions for $17.99 each.


MICROSOFT OFFICE 97 FOR WINDOWS FOR DUMMIES
A Reference for the Rest of Us!

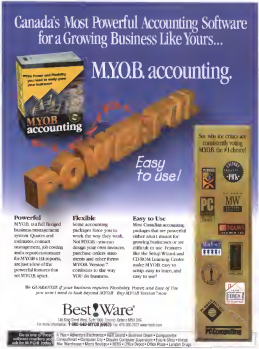
IDG also publishes a line of references for the educational market: the more gently and politically correctly named *For Teachers* series. Four new titles have been announced, *Microsoft Works for Teachers, Window 95 For Teachers*, and *Microsoft Office 97 For Windows For Teachers*, and *The Internet For Teachers 2nd Edition.* These titles sell for $34.95 each.—*JE*

Contact: Macmillan Canada/IDG Books Division Tel 416-293-8464 Web site http://www.idgbooks.com

Web users "discover" EXN • On Dec. 31 1994 the first site by a Canadian broadcaster appeared on the Web—it was launched by The Discovery Channel Canada. And two years later after other Canadian broadcasters have created their own Web sites, The Discovery Channel's site (see contacts) still attracts more than one million visits a month and was recently voted the top Canadian broadcaster Web site by *The Globe and Mail.*

The Discovery Channel has recently launched what it calls "the next step in online interaction" with the unveiling of EXN—the Exploration

Continued on page **12**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Internet: www.viewsonic.com

WHAT'S NEW

Continued from page 18

Network. This site is a dedicated science Web site that contains its own content and identity, yet incorporates the science programming themes of Discovery Channel Canada. The goal of EXN is to provide viewers with a way of getting another dimension and more information on topics covered in the programming contained on the channel. EXN's focus includes scientific innovation, educational content and technological magic and will feature daily science news features and an "Amazement Park."

EXN News presents short science news stories of the day designed to complement the stories covered on the channel's flagship daily science show @discovery.ca. Feature stories by the EXN news organization offer a more comprehensive look at some of the most intriguing science issues, and the "Amazement Park" is EXN's experimental section, where the leading edge interactive components can be found. The Discovery Channel has entered into partnerships with Environment Canada, the Canadian Space Agency and The National Research Council to showcase the latest in multimedia Web technologies.

EXN is a major investment for The Discovery Channel, which plans to spend $5 million on its development over the next five years as part of its commitment to the Canadian Radio-television and Telecommunications Commission to develop Canadian media. The site has already passed the one million hit mark, and lays claim to being Canada's foremost science resource centre, offering television viewers and Internet users alike a means to learn about science. Interesting developments in the world of science and of the World Wide Web are taking place at EXN—stay tuned!—*KS-R*

Contact: EXN Web site: *http://www.exn.net/*
Discovery Channel Web site: *http://www.discovery.ca*

Matsushita to ship DVD drives • Spokesmen for Matsushita Electric Industrial Co. Ltd. said they expect to begin shipping DVD ROM drives in volume early next year. DVD-ROM drives are the successor to the CD ROM format, which read discs that are about the same size as a regular CD ROM, but are capable of holding 4.7 GB of information, as opposed to the 650 MB of data regular CD-ROMs hold.

Matsushita, better known for products sold under its brand names like Panasonic, Technics and Quasar, has already begun to ship sample drives to prospective original equipment manufacturer (OEM) vendors. The firm is confident that other providers of digital media (such as the sound recording and software industries) will be won over by their new DVD encryption scheme, which will prevent users from easily making copies of DVD discs. Matsushita also has plans to start mass production of recordable DVD drives (called the DVD-RAM) sometime late next year.

Matsushita expects to sell more than one million DVD drives within a year of their launch and expects stiff competition in the marketplace for such devices. Mass production will likely see DVD drive prices in the $250 to $350 range for OEM vendors, and somewhat higher for end users.

As a prelude to the introduction of DVD for use in the home, Matsushita announced the development of the world's first DVD Internet Linkage System for the World Wide Web, which can play high-quality MPEG2 video through a Web page. The Web client setup consists of a DVD ROM drive, an MPEG2 decoder board, an HTTP Request Conversion Program and software to combine motion pictures within Web pages.

With this setup, Webmasters can deliver large quantities of MPEG2 motion pictures which are played directly from the DVD ROM to the Web pages when requested. A disc identification number keeps track of the items requested, so it can be used for a wide variety of services such as Web-based catalog shopping, publishing, travel and educational purposes—*KS-R*

Contact: Matsushita, Tel: 905 624-5010

vision.com cable consortium offers national high-speed Internet access • The cable industry's research and business development consortium vision.com recently announced the national roll-out of WAVE, a high-speed Internet access service delivered through cable. WAVE uses cable modems plus a combination of fibre optic and coaxial cable to bring high speed Internet access to the home.

WAVE is vision.com's first collaborative effort. (vision.com consists of Rogers, Shaw, Cogeco/Cablenet, Western CoAxial, Cable Regina, Delta Cable, Access Cable Television,

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WHAT'S NEW

Videon CableSystems and Vidéotron who together serve more than 80 percent of the total cable subscribers in Canada.)

WAVE does not require a dedicated phone line or dialup modem—instead users are always connected to the Internet via cable, much as their television is. "The cable industry will now offer Canadians the fastest, most convenient access to the Internet," said Richard Stursberg, president of vision.com. "Internet users will find we have the best technology and the most responsive service available. The Internet is an amazing place. WAVE turns it into a faster amazing place unleashing the potential of the Internet by bringing high-speed affordable bandwidth to the home. Wherever WAVE has been offered it has had far higher penetration than telephone offerings."

Only about 200 000 current cable subscribers serviced by the vision.com consortium are ready for WAVE, but by the end of 1997 this number is expected to rise to over two million Canadian homes. Until they become commercially available cable modems are rented from a cable company and virtually unlimited access to the Internet is included for one monthly fee of $55. A subscription to WAVE also includes up to five e-mail addresses and 5 MB of Web space dedicated to home pages.—*KS-R*

Contact WAVE Web site http://www.wave.ca/
For more information call your local cable company

Canadians tackle Net content concerns • TORONTO (NB)—Two Canadian companies and a number of Canadian educators are working in their own ways on the problem of keeping children away from inappropriate Internet content. Calgary based Net Shepherd Inc. has announced a content rating program called the StartSafe Challenge in co-operation with the federal government's SchoolNet while Vancouver based Net Nanny Ltd has just announced a new release of its namesake [illegible] software.

Kevin MacDonald, a spokesman for Net Shepherd said his company launched the StartSafe Challenge to have teachers, librarians, and other qualified educators rate the roughly 57 million documents available on the World Wide Web. Through a collaborative rating system using Net Shepherd's DAX Hound software participants will assign ratings ranging from general through objectionable documents, and also by quality using a five-star system. These ratings will be placed in a database for future reference.

SchoolNet the network the Canadian government set up to link Canadian schools is supporting the project, and Net Shepherd issued a challenge to schools in the United States to participate as well. MacDonald said his company plans a major promotion of the project in the United States later this year.

Les Jickling, marketing coordinator at Net Nanny said schools are showing a growing interest in his company's software which allows parents or teachers to limit access to Web sites. This is partly because the issue is getting a lot of public attention lately and partly because schools are using the Internet more and more, he said.

Net Nanny has just released Version 3.0 of the software. One new feature is the option of creating a "Can Go" list so that only listed sites are accessible as an alternative to the earlier version's "Can't Go" approach which required updating to keep up with the discovery of new sites that needed blocking.

Jickling said businesses are also showing interest in Net Nanny because it allows them to control time-wasting use of the Internet at work without blocking employees' access altogether. The suggested retail price for Net Nanny 3.0 is $39.95.

Contact: Net Nanny Web site
http://www.netnanny.com
Net Shepherd Web site http://www.shepherd.net/

Canadian ISP group announces code of conduct • TORONTO (NB)—The Canadian Association of Internet Providers (CAIP) has created a voluntary code of conduct that it hopes its members and other Internet service providers (ISPs) will follow.

The code pledges compliance with all applicable laws and in particular commits ISPs not to knowingly host illegal materials on their systems. It also promises respect and protection for users' privacy, and a commitment to public education about Internet issues and technology.

Margo Langford general counsel for iStar Internet Inc. in Ottawa and chair of the group that drew up the code says there is no formal policing mechanism at the moment but CAIP may at some point in the future make compliance with the code a condition of CAIP membership.

The organization currently has about 40 members, or about 10 percent of Canada's ISPs Langford said. However, those ISPs serve somewhat more than 10 percent of Canadian Internet users. iStar Internet, Canada's largest ISP has ➤

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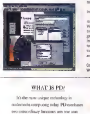
about 13 percent of the overall market, she said, and several other sizable ISPs are also CAIP members.

Langford said the code's commitment to not knowingly host illegal material means ISPs will remove material that is illegal—such as child pornography—if it is brought to their attention. Clauses in the code also commit ISPs to make a reasonable effort to investigate legitimate complaints about content they host, and to notify the content provider or abuser of the complaint before taking action.

On the privacy front, the code states that ISPs will provide private information to law enforcement authorities only as required by law.

Contact: Ron Kawchuk at CAIP Tel: 905-279-6417
Fax: 905 279-9418 E-mail: kawchuk@io.org

New Acrobat 3.0 is more Web friendly • Adobe has just released the latest version of Acrobat 3.0, which enables users to publish documents in a format that can be read across virtually all platforms. The newest version supports special features that make it more suitable for use on the World Wide Web, including integration with Netscape Navigator and Microsoft Internet Explorer, the two most popular Web browsers.



Acrobat creates a graphic file type from word processing and desktop publishing programs that can be read using Acrobat Reader. Like hypertext markup language (HTML), it is also possible to embed hyperlinks into other parts of the document or other places on the Web, but unlike HTML, all of the font and formatting information of the original document is retained. Another advantage of this format is due to the fact that Acrobat Reader is available for most computing platforms, so the resulting PDF image file can be read by almost anybody with a computer.

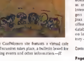
The new version of Acrobat offers integrated viewing of PDF documents directly through Web browsers that support the full Netscape Navigator API architecture. Files can also be created to optimize the resulting PDF files for online delivery, so duplicate background objects, such as text, line art and images, are combined to reduce file size. The PDF format now provides page-on-demand access, displaying each page of the PDF document as requested, whereas previously the entire document file had to be downloaded first.

PDF files can also be embedded directly within an HTML page using the HTML <EMBED> tag.

In addition to these Web enhancements, macros have been included to enable Microsoft Word and Microsoft Excel for Windows 95 users to create Acrobat files directly from either program. Image files can now be directly scanned into the PDF format, and touch-up text editing tools are now included for making quick changes to an Acrobat document. Adobe Acrobat 3.0 has an expected street price of $295.—*KS-R*

Contact: Adobe Canada Tel: 416-360-2317
Web site: http://www.adobe.com/acrobat

CoolWomen surf the Web • A new CoolWomen Web site is online "to tell the stories of the lives of women in Canada in a down-to-earth style which highlights their dreams and their goals, and what their stories mean to other girls and women." According to Nancy Ruth, one of the 12 people who developed the site, "The story of women in Canada is now online across time in a format that is fun and appealing for all generations. The Web site creates a comfortable place where girls and women can experience the lives of others in Canada from many different times and backgrounds, and explore their passions, perspectives and legacies."



The CoolWomen site features a virtual cafe where discussion takes place, a bulletin board for upcoming events and other information.—*JE*

Contact: CoolWomen Tel: 416-924-6861
Web site: http://www.coolwomen.org

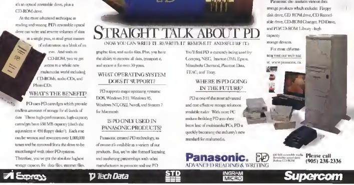
Halifax company wins IDC research grant • NB—Brooklyn North Software Works, a two-year-old developer of hypertext tools for the World Wide Web based in Halifax, N.S., has won the first annual Software Market Research Grant from the federal government. The Industry Canada grant provides Brooklyn North with $20,000 worth of market information and analyst services from Toronto's International Data Corp. Inc. To qualify for the grant, which will be offered again next year, a software company must have a head office and development facilities in Canada, a product on the market, and annual revenues between $200,000 and $5 million.

Pink Panther's passport to peril • A new CD-ROM title from New York-based Wanderlust International features the animated adventure of the popular cartoon cat offering a mix of humor, problem solving and action. The Pink Panther character, originally introduced in the Inspector Clouseau live-action comedies in the 1960s, has been licensed from its copyright holder MGM/UA Family Entertainment to star as an international agent seeking to protect international travellers from a variety of dangers. Like Corel's new Wild World of Madison Jaxx game, the Pink Panther's Passport to Peril offers an element of learning, with a cultural database of over 250 pages of info and pictures on food, peoples and languages, nature and history.—*JE*

Contact: Wanderlust Tel: 212-966-5887

PageMart Canada introduces narrowband personal communications service • Industry Canada has awarded a licence to provide two-way wireless messaging services to Toronto-based PageMart Canada. The new licence will permit PageMart to establish two-way messaging and data communications, including wireless modem information on demand, telemetry and response paging.

Continued on page **17**



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WHAT'S THE BENEFIT?

PD uses PD cartridges which provide endless amounts of storage for all kinds of data. These high-performance, high-capacity cartridges have 650 MB capacity (that's the equivalent of 450 floppy disks!). Each one can be written and rewritten over 1,000,000 times and be removed from the drive to be interchanged with other PD systems. Therefore, you've got the absolute highest storage capacity for data files, internet files, graphic files, and audio files. Plus, you have the ability to remove all data, transport it, and secure it for over 30 years.

WHAT OPERATING SYSTEM DOES IT SUPPORT?

PD supports major operating systems: DOS, Windows 3.11, Windows 95, Windows NT, OS/2, Novell, and System 7 for Macintosh.

IS PD ONLY USED IN PANASONIC PRODUCTS?

Panasonic created PD technology, so of course it's available in a variety of our products. But, we've also formed licensing and marketing partnerships with other manufacturers to promote and use PD. You'll find PD is currently being used by: Compaq, NEC, Imation (3M), Epson, Mitsubishi Chemical, Plasmon Data, TEAC, and Toray.

WHERE IS PD GOING IN THE FUTURE?

PD is one of the most advanced and cost effective storage solutions available today. With more PC makers building PD into their latest line of multimedia PCs, PD is quickly becoming the industry's new standard for multimedia.

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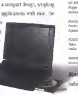

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Specifications

Processor	Intel Pentium 100MHz (Optional: 120MHz / 133MHz)
Memory	8MB EDO (Optional: 16 / 32 / 48 / 72 / 80MB) 256K Cache
Display	11.3" Dual Scan SVGA LCD (Optional: 10.4" / 12.1" TFT LCD)
Hard Disk Drive	1.0GB 2.5" Supports LBA mode (Optional: 1.3GB / 2.0GB)
CD ROM Drive	Hex Speed Removable
Floppy Drive	1.44Mb 3.5" Removable
Keyboard	87 keys, IBM 104-key keyboard compatibility Dedicated Windows 95 function key, 12 Function keys
Pointing Device	2.25" x 1.75" Touchpad
Power Management	Full on; Doze; Standby; Rest (save-to disk); System off
Expansion Port	240 Pin Port, 9 Pin COM (Serial) Port, IrDA compatible Infrared Port, 25 Pin LPT (Parallel) Port ECP and EPP mode support, 15 Pin External Display Connector Port
PCMCIA Slots	2 Type II / 1 Type III cards, Supporting Zoomed Video Port
Video	32-Bit PCI Bus, 1MB Video Memory with Software MPEG
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Continued from page **14**

According to PageMart "Narrowband PCS (N-PCS) is thought of as an enhanced form of paging service yet it really represents a shift in the entire concept of wireless messaging The common name for this emerging technology is two-way paging, but because it encompasses so many advanced messaging services, including voice messaging, N-PCS more accurately defines the wide array of products and services coming to market over the next several years E-mails faxes and messages can be sent both ways, no fuss and no wires"

An example of what N PCS will make practical would be the ability to use a notebook PC or a handheld personal digital assistant (PDA) to connect to the Internet via wireless modem to the PageMart network service. A wide variety of devices from pagers to computers, can hook up to the N PCS once it is in place

PageMart intends to roll out a test version of the new service early this year with wider availability mid to late 1997 —JE

Contact: PageMart Canada Tel: 416-423-6806
Web site http://www.pagemart.ca

"Marshall McLuhan, What Are Ye Doin?" • Marshall McLuhan who began his scholarly life as a kind of prematurely middle-aged fusty academic prude who viewed the mass media with alarm eventually blossomed into the unintentional prophet of the Information Age His often obscure catch phrases such as "the global village" and "the medium is the message" have inspired much of the serious study of mass media and communications technologies in the last 35 years As well the "cyberculture" that emerged in the mid 1980s gained much inspiration from his writings He is also the patron saint of *Wired* magazine in its mission to make the computer revolution hip

Now the latest in McLuhan-mania comes to you via the World Wide Web with the launch of *Messenger—the Marshall McLuhan Movie* a virtual film production studio that will allow subscribers to participate in every facet of the production of a real life documentary film on McLuhan "from location scouting to camera reports to screening dailies to the number of sticky buns eaten (by the crew) each day Other benefits include a ticket to opening night, and later a VHS cassette of the film with the subscribers screen film credit as an associate producer"

In other words for a mere $49 95 fee any wannabe filmmaker can participate virtually in the making of this film and get a production credit on his or her resume, for what it's worth As the title suggests, *Messenger—The Marshall McLuhan Movie* is a project designed to illuminate the connections between McLuhan's life and thought and the wired world of today Subscribers can participate in the project via the Internet in much the same way as one participates in growing a bonsai plant—you get to watch the thing taking shape, over time As a realtime course in filmmaking, this could be of interest and instruction not to mention fun for the family's would-be George Lucas —JE

Contact *Messenger* Tel: 416-923-9813
E mail marsmclu@hotstar.net

Canadian information technology Web site expands • NB—The Information Technology Association of Canada (ITAC) has expanded its World Wide Web site adding links to market research, technology publications, and government agencies, as well as assorted other information

ITAC an association of information technology vendors that includes most of the larger computer and telecommunications suppliers in Canada launched its original Web site in May 1995 said Lyle Bunn vice-president of communications. The site has now had a redesign he said and ITAC plans "a pretty aggressive rollout" of new material over the coming months.

The site now includes a "library" where ITAC policy documents are available for downloading and longer reports as well as transcripts of speeches by ITAC officials, can be ordered.

The new InfoIT section includes links to a sizable list of federal and provincial government departments that offer services of interest to information technology companies, a link to research firm International Data Corp (Canada) Ltd.'s Web page a modest calendar of industry events, and a listing of meetings of standards organizations along with other material

Those who want to check industry news will be able to use links from the site to the sites of some high-technology publications, Bunn told Newsbytes. Those who are looking for information on IT products will find links to the ➤

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WHAT'S NEW

Web sites of some of ITAC's member companies.

Buon said ITAC will be posting some new statistics on the Canadian IT industry's size and growth rate within a couple of weeks and a document dealing with the Year 2000 software problem before the end of the year.

Contact: Information Technology Association of Canada, Web site: http://www.itac.ca

Telus launches CDPD for Alberta • NB—Telus Corp., of Edmonton, has launched Cellular Digital Packet Data (CDPD) service in Alberta. Commercial CDPD service—allowing customers to transmit data over cellular connections at speeds as high as 19.2 Kbps—is due to be available this month throughout Telus Mobility's coverage area, company officials said.

What's New is compiled by Jeff Evans, Keith Schengili Roberts, Chris Fisher, Graeme Bennett, David Tanaka and Megan Johnston.

ASHTEQ

intel inside

HOME SPECIAL

QPC 166 HS *INTEL P-166 PROCESSOR*

- Gigabyte Motherboard with 430 vx C/S
- 512k Pipeline Cache 32MB RAM
- 2.0GB Hard Drive
- ATI Mach 64 2MB
- 3.5" Disk Drive
- 12X CD-ROM
- SB 16 Sound Card
- 60 Watt Speakers
- 104 Win95 Keyboard
- 15" SVGA 1280x1024 Monitor
- 33.6 Fax/Data/Voice Modem & Mouse

$2295 OR $79.56/M

SOFTWARE!!!

- Windows 95 with CD & Manuals - Sidekick 95 - Dashboard 95
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- COREL Presentation 7
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- 1MB PCI Video Card
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- Mouse/pad 33.6 Voice/Fax/Modem
- Microphone Windows 95 Keyboard

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To 166MHz ....$310 To 32MB RAM $110
To 15" Monitor $115

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- 80 Watts Speakers
- Microsoft Mouse & Pad
- 15" 1280x1024 Monitor
- Sound Blaster 32 Sound Card
- 104 Keytronic Keyboard
- 33.6 Fax/Data/Voice Modem
- Win95 Disks & Manuals

OR 95.08/M

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Volume 10 No 1 January 1997

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PUBLISHER / EDITOR Douglas Alder
ASSOCIATE PUBLISHER Hari Singh Khalsa
MANAGING EDITOR Graeme Bennett
NEWS EDITOR David Tanaka
ASSISTANT NEWS EDITOR Megan Johnston
TEST LABS Steve Halinde, Tim Illingham-Wallis
CONTRIBUTING EDITORS Geof Wheelwright, Jeff Evans
PRODUCTION MANAGER Sari Lerner
PRODUCTION Jason Edmonds, Jana Kelar, Kirsten Olsen, Ernest Steiner, Lisa Wilder
CONTROLLER Christine McPhie
NATIONAL AD SALES John Oliver (416) 588-1580 Toronto john@tcpon.com
MARKETING DIRECTOR Patrick FitzGerald
PROJECT MANAGER Judy Prange
INFO SYSTEMS DIRECTOR Joshua Paul

VANCOUVER OFFICE Circulation: BC 80,000
503–425 Carrall St., Vancouver, BC V6B 6E3 Phone: (604) 688-2120
Fax: main (604) 688-4270, accounting 688-7063, press releases 688-4180
BC AD SALES Dyal Singh Khalsa, Kit Griffin, Elspeth Grafton
(604) 688-2120 bcsales@tcp.ca
CIRCULATION MANAGER Har Pal Singh Khalsa (604) 688-2120
harpal@tcp.ca

PRAIRIE OFFICE Circulation: Alberta 60,000, Prairie 37,000
The Seventeen Bldg. Suite 306, 908 17 Ave. S.W. Calgary Alberta T2T 0A3
Calgary Direct Phone: (403) 228-3365, Fax: (403) 228-3456
Alberta, Sask., & Manitoba: 1-800-497-3355 Fax: 1-800-886-1156
SALES MANAGER Suzanne FitzGerald suzanne@tcp.ca
AD SALES Frank Pisani fpisani@tcp.ca
WINNIPEG AD SALES Shawn Wnuk
Tel (204) 949-6438 Fax (204) 992-2124 shawn@tcp.ca
OFFICE MANAGER Jennifer FitzGerald
PRODUCTION Taryn Lee Chin
DISTRIBUTION MANAGER John Siegel

TORONTO OFFICE Circulation: Greater Toronto 100,000
408–99 Atlantic Ave., Toronto, Ontario M6K 3J8
Phone: (416) 588-1580 Fax: (416) 588-6674
ASSOCIATE PUBLISHER Maureen McKee
NATIONAL SALES MANAGER John Oliver (416) 588-1580
john@tcpon.com
ONTARIO AD SALES Yvette Ossuallo, Tina Wong, Rob Crawford
(416) 588-1580 ossallo@tcpon.com
PRODUCTION Helga Sirk, Paul van Elsberg, Andrea Jardim, Susan May
CIRCULATION MANAGER Charles Oliver charles@tcpon.com

EASTERN OFFICES Circulation: Eastern 105,000
300–260 St. Patrick Street, Ottawa, Ontario K1N 5P6
Phone: (613) 789-6431 Fax: (613) 789-6433
380 Notre Dame Ouest, Suite 103, Montreal, Quebec H2Y 1T9
Phone: (514) 843 4770 Fax: (514) 843-3484
ASSOCIATE PUBLISHER Einar Murchison (613) 789-6431
ottsales@tcpon.com
MONTREAL AD SALES Bill Lawson (514) 843-4771 mtlsales@tcpon.com
HALIFAX AD SALES Judy Pulhrever (902) 457-4380 atlsales@tcpon.com
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letters@tcp.ca editorial@tcp.ca classifieds@tcp.ca

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Upgrade to 10.4" active matrix display			$813
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Int. CPU L2 Cache	256k	256k
Base / Max RAM	8 mb / 40 mb	8 mb / 32 mb
Local Bus Video RAM	VLB 1 mb	PCI 2 mb
Max. Removable HDD,	2 GB	2 GB
Floppy Drive	1.44 mb	1.44 mb
DSTN Colour LCD	10", 640x480	12.1" 800x600
External Monitor	simultaneous 1024x768	
Ports	1 parallel, 1 serial, 1 external video port	
Two PCMCIA slots	Type II & III	Type II & III
SVGA, PCMCIA Drivers	Included	Included
Pointing Device	Pointing device	Trackpad
Battery Type	NiMH	NiMH
Sound	16-bit speaker microphone	
Joystick	No	Yes
CD-ROM	Optional external	built-in 6xCD-ROM
Carry Case, AC Adaptor	Included	Included
Dimensions (inches)	11.3 x 10 x 2.2	11.7 x 8.8 x 2.2
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Video card Diamond OEM **S3 Virge 3D graphics** & Mpeg	
Video memory The only one with true 50ns 2mb EDO ram	
Mtr 17" Intlvw **.26dp, UVGA 1280x1024 75hz** Hitachi tube	
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Voice/Fax/Mdm	33.6 full telephony internet ready
Hard drive	2.5 GB enhanced IDE
Hard disk cache Controller	**16mb realtime diskcache**
CD-ROM drive	internal 8x enh IDE
System BIOS	Latest Award Plug & Play
Plug n Play support	Yes
Opr system	Win 95 full CD ver with manuals installed
Extras 100 W Speakers, microphone, Win95 keyboard	
Software included	31 CD titles incl encyclopedia
Warranty 2 years Canada wide P & L system warranty	

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P-133 Pentium ® processor 512k p.b cache	$2718
P-166 Pentium ® processor 512k p.b cache	$2924
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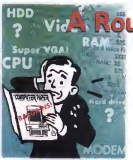

A Rough Guide to Reading Ads

How to break through the jargon to find the best computer deals

BY ROSS MACDONALD

A couple of years ago I wrote a guide to reading computer ads that generated a lot of appreciative feedback from legions of shoppers mired in the maze of choice and lingo that permeated every computer ad and sales pitch.

To no one's surprise, the syndrome continues today. Now, however, quite a bit of the machinery has changed to the point where there's a whole new set of things to learn before venturing forth to buy a computer.

Gone, for example, is the confusion engendered by trying to grasp the differences between five or six kinds of 486 chips. And, if you recall hearing something about a Vesa Local Bus, you can forget that too, because the prominence of the Pentium has introduced at least some kind of standard, chipwise, and similarly dictated the use of the PCI bus on all consumer-oriented computers.

However, the function and number of components required to make a personal computer have remained more or less the same, and even increased to some degree as multimedia capability has become an expected feature.

Here, then, is the new rough guide to reading computer ads, updated for the late 1990s.

The Chip
Pentium, AMD K5, Cyrix 6x86, etc.

This is usually the first thing listed in any computer ad. It tells you what kind of chip—or central processing unit (CPU)—functions as the actual brain of the computer.

But, where everyone's familiar—or at least thinks they are—with Intel's Pentium brand of chips, the AMD and Cyrix brands often engender some degree of mistrust or confusion despite the fact that there's no genuine need for it. In simplest terms, it can be safely said that all three of these major brands of CPU are compatible, the two competitors being more or less Pentium clones.

Any differences lie in the subtle technological tricks each manufacturer employs to try and grab some segment of the market in terms of increased performance, lower price or both.

It all boils down to technological tricks, apparently because the basic process of CPU manufacture for the PC market has generally involved a company like Intel releasing a code set for a new chip—say, the Pentium—prior to the chip's introduction because motherboard manufacturers and software developers need to know how to address the chip when it becomes available. That way you can buy software for a new chip on the same day the CPU is released because software makers have had the code for some time prior.

"All the CPU makers have to adhere to [an] established code in order to ensure compatibility. But then they begin exercising little tricks to try and gain some competitive edge [and] most of the performance tweaks used by the various manufacturers are applied to the internal cache," explains Scott Knight, president of Vancouver-based Platinum Upgrades. "A cache is essentially a guessing game. When you're trying to implement a cache you're trying to guess what the next instruction to the chip is going to be, based on all the previous instructions. A write-back cache, for example—which is faster than a write-through cache—is quite simply a better guesser because there are more hits based on the algorithm it uses."

Knight says not all CPUs have a write-back cache at this point "because that technology has to be supported by the hardware and the firmware and the BIOS [binary input/output system]. So it's just not possible for a chip maker to call up the motherboard makers and say they're going to switch to a write-back cache, because that would mean a whole new program of research and development for the motherboard makers to be able to support it."

Cache itself is a complicated business because there are so many different types (write-through, write-back, pipeline burst, etc.) and, as we've just seen, each competing chip maker applies its own technology to designing it. In other words, there's no point in trying to explain them all here. Just remember that "write back" is better than "write through" and "pipeline burst" is better than "write back"—the term "better" is used loosely here to indicate faster when all other factors remain the same.

And a last word about cache. Those described so far are "internal," meaning they're built into the CPU itself, which also means

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they are very small—generally about 16K.

But you'll often see another specification in a computer ad specifying Level 2 (or L2, or secondary) cache, which is an external set of chips built onto the motherboard to work with the CPU in maximizing performance. When L2 cache is mentioned in an ad you can expect to find either 256K or 512K in a normal consumer level machine. As with most things computer bigger is better

But back to the actual CPU which is what we're supposed to be talking about here Whichever brand of CPU is in the machine the name will be followed by a number which tells the internal speed of the chip as measured in megahertz, or MHz. This is one of those once simple numbers that has been fudged somewhat by newer technology

The first complication comes from the fact that since Intel is the big mama of manufacturers all other CPUs are classified by speed "as if" they were Pentiums This is called the "P rating " So for example, a particular AMD K5 chip might have a "P rating" of 166 MHz but have an actual speed of 100 MHz What the "P rating" tells us is that it claims to be as fast as an Intel Pentium 166 MHz in terms of actual computing.

Dean Whitehair at AMD put it this way: "I think what you're going to see with all the new advanced architectures that all microprocessor manufacturers are going to right now is that core clock speed is going to become more and more irrelevant—especially for the end user Unfortunately, right now they're still measuring CPU performance based on clock speeds But what we're seeing for example is that AMD's K5 with a P rating of 133 has a core clock speed of only about 100 MHz but it performs as fast or faster than a Pentium 133 "

What's supposed to be appealing about a K5 is that you get that equal performance for a lot less money But that's a whole 'nuther story we've already looked at in a previous issue of *The Computer Paper* (check out our Web site at http www tcp.ca)

Regardless of all that theorizing, it remains true that the higher the clock speed number, the faster the actual CPU—a Pentium 166 is definitely faster than a Pentium 100 for example What has rendered this once mercifully simple concept more complex, however is that CPU speed is no longer a reliable indicator of system performance

In combination with the different types and sizes of internal and external cache the various access and throughput speeds of different hard drives the amount, speed and type of RAM etc you might just find that a computer containing a CPU of a certain speed actually performs as fast as, or faster than one with a faster CPU but maybe for the same or even less money

So hypothetically a system with an AMD 100 MHz K5 in combination with certain other bits and pieces might outperform another machine with a Pentium-166 MHz inside

CPU buying tip· The best thing to do here is quite simply have some demonstrations run in the store Take a CD-ROM with you, for example, and run it on differently based machines. Time how long it takes each system to execute a bunch of random commands. In the end, it won't really matter which brand of CPU is inside the machine or even how fast it's rated—as long as it's made by a major manufacturer Overall system performance counts more.

RAM

Things get a lot easier at this point. RAM stands for random access memory and just as with most computer stuff, the more the better Explaining how memory works would take volumes but all you need to know is that eight megabytes—or MB—of RAM is absolutively positutely unequivocally the smallest amount you can have in a computer if you're going to run today's software with any efficiency But with only 8 MB of RAM you'll find that many things run at a pace that's hair-pullingly slow

That's because RAM is where a lot of software information is stored for quick retrieval by the computer. When your RAM is full up the computer has to go back to the hard drive, search for the information it's looking for (how to make italics, for example) read the instructions, then actually do it. In many cases this can mean waiting several minutes between pushing the mouse button and seeing what you wanted to happen actually appear on the screen In most cases, though the delay is more like seconds But when you're trying to work or play a game or watch a CD-ROM delay after delay will drive you nuts!

Just to mix things up a little we're now presented with the option of something called extended data out (EDO) RAM This is a quicker type of RAM than the regular old dynamic RAM (DRAM) for highly technical reasons and can according to some estimates, boost ➤

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performance by four to 15 percent. However, EDO RAM must be supported by the motherboard inside the machine

Many computers now come with 16 MB of RAM, which is optimum for running most software under Windows 95 Moreover, you can always add more RAM at any time and prices have dropped to such a low level ($10 to $20 per megabyte) that there's no excuse for scrimping in this department. If you're serious about buying a system that comes standard with 8 MB RAM you can probably—and should try to—swing a deal for eight more

RAM buying tip. **You can never have too much RAM But there's a certain point at which most people won't see any benefit (usually above 20 MB with Windows 95) So don't go crazy unless you have some very specific RAM dependent applications in mind.**

Hard drive or hard disk or HDD

The hard drive is the machine that stores all of your software and any stuff you create. It's a direct cousin to the floppy diskettes you see people stuffing into slots with the difference that it's non removable and capable of holding a lot more information All personal computers come with a hard drive All you need to do is get the biggest one you can afford

Seeing 810 MB HD in an ad tells you that the hard drive can hold 810 megabytes of information. In terms of typing, that's about 250 000 pages Sounds like a lot But not a lot of computer stuff consists of simple text It might take any of us a lifetime to generate 810 MB of word-processing files, but the software package that lets you create those files could quite easily need 50 or 60 MB just to fit in the computer

Just to give you an idea on my computer the Windows 95 directory alone holds 129 7 MB of stuff and that doesn't include all my software applications or all the files I've created. And I should emphasize too that my personal storage requirements are quite modest compared to most

In everybody's favor, however, hard-drive size is becoming less and less of a concern for most system buyers as hard drives have become exceptionally inexpensive on a price per megabyte basis Purchased separately the price of a 1 6 GB (gigabyte) hard drive (it can hold 1 600 MB of data) just squeaks over the $300 mark That means most system builders will throw in a reasonably proportioned device—usually 810 MB or if you're lucky 1 6 GB—while keeping the whole system price down. Unless you're really planning on stocking up on resource hungry software—or creating huge resource hungry graphics files—1 6 GB or more should stand you in good stead until it's time to move on to yet another computer a depressingly brief couple of years down the road

Good for us too is the fact that, in one of those many technological paradoxes these new bigger hard drives are actually much quicker at storing and retrieving information than the older, smaller ones. So we're getting a boost in system performance along with a lot more storage space for considerably less money than two years ago.

Hard drive buying tip: Go for the biggest hard drive you can afford Again, you can probably swing an upgrade deal with any enthusiastic sales person at the time you're hitting them up for more RAM Remember, you can never have too big a hard drive but, as with RAM, there is a personal point of diminishing return

PCI bus

Bus was a very complicated thing to explain when 486s were de rigueur because there were several different types you might encounter inside a given machine. But all that's been made simpler now because all new computers use Pentium—or Pentium like—CPUs and all motherboards use the PCI bus because it was designed to maximize performance from those chips.

In simplest terms, the bus is really just a bunch of wires that carry the electrical information back and forth between the chip and the rest of the stuff in the computer. And bus speed, like most things computer, makes a big difference when it comes to performance. You don't really have to know the following information, but I'll throw it in for those who are interested (everybody else can skip a few paragraphs).

Regardless of the speed of your CPU, it communicates to everything else in the computer through the bus. And, just as with CPUs, bus speeds are measured in MHz. Now this is where it gets a bit tricky: all the newer motherboards have jumpers that allow you to set the bus speed at 25 MHz, 30 MHz or 33 MHz. And when you buy your system, these jumpers will be set to optimize whichever speed of CPU you're getting (100 MHz, 133 MHz, 166 MHz, etc.). However, where the chip actually meets the bus, there's a thing called a multiplier for addressing the CPU's clock speed, and these can be limited to 1.5x or 2x or 3x depending on the quality and brand of the motherboard itself.

If your motherboard has a 3x multiplier, your computer will be upgradable at any time all the way up to a Pentium 200 or equivalent CPU. A 1.5x or 2x multiplier will limit your upgrade options. Therefore, if you anticipate an upgrade of your CPU down the road—and that's just about a given these days—make sure you get a clear answer from the retailer about just how upgradable your machine is going to be. They might not know all the technical ins and outs, but make sure you know exactly what the motherboard can accept so there won't be any nasty surprises when the time comes.

All of which helps explain why the relationships between machines of different speeds isn't linear. Put more simply: when all other factors are constant, a Pentium 166 machine will likely be more than the arithmetically expected 66 percent faster than a Pentium 100 because it has the benefit of faster CPU communicating through a faster bus.

But back to our story..

All your internal cards—video, sound, hard drive controller, SCSI controller, etc.—communicate with the CPU by sitting in slots connected directly to the bus. So, the faster the bus, the faster or more efficiently all those components will operate.

PCI (peripheral component interconnect) has been specifically designed to take advantage of the Pentium type chips' super fast 64-bit elements. And it has the additional advantage of employing what everybody calls "Plug and Play," which means that any PCI card you put into a PCI slot will be recognized by the computer automatically—no screwing around with configuration files and the like (at least in theory).

But not all the expansion slots inside your computer are going to be PCI because many cards just don't need the kind of speed PCI facilitates. A faxmodem, for example, won't perform any faster in a PCI slot. That's why, if you ever look inside your computer, you're going to see both PCI slots and what are called ISA (that's industry standard architecture) slots on the motherboard. ISA is the most common type of interface for many kinds of common expansion cards—like sound cards and faxmodems—so those devices are wired up to work in the ISA slots anyway.

Buying tip Bus type is no longer a worry so you can ignore any notation in the ad that specifies PCI because there isn't any alternative anyway. However, bus speed will become an important factor in future CPU upgrading, so try to get a motherboard that can accept any CPU speed up to 200 MHz.

VGA or SuperVGA (SVGA) color

This term is compu code for what amounts to two separate items in your system—the monitor and the video card (sometimes called a graphics or video-graphics card) inside that translates electro-stuff into pictures and text for you to look at.

SVGA (super video graphics array) is better because it can give higher resolution images.

Continued on page **25**

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A guide to reading ads

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But not everybody takes advantage of that, so the more economical VGA (video graphics array) is still used in some machines though it's gradually disappearing to the point where you likely won't be offered anything other than SVGA on a new system

A more important question to ask is how much video RAM is on the video card inside the machine These cards contain their own version of RAM and video RAM is responsible for speeding up the process of translating meaningless electronic bumpf into pictures and text. It also dictates the limits of how many colors are possible at what levels of resolution (higher resolution requires the processing of exponentially larger amounts of information to put nice pictures up on the screen and move them around)

But monitors and video cards are where retailers most like to go cheap because it's the best area in which they can make big profits. It's unlikely that a burgoon system will sport the best representative of either item though even the cheapest these days are as good as the mid range of only a few years ago

Video card buying tip You want at least 1 MB of RAM on the video card but 2 MB is better Some cards will hold 4 MB but they're much costlier and you have to be a real specialist to be able to make use of their capabilities An ideal situation for most is if the video card comes with 1 MB of RAM but has slots on it to take one more megabyte That way you can add more later if you want.

Monitor (included or, most likely, not)
You know what it is, but do you know how it works? There are a lot of technical things to consider in monitors, but most name brands are just fine guts-wise. As far as you're concerned, the "dot pitch," the picture size and whether the monitor is interlaced (int) or non-interlaced (nl) are most important.

Dot pitch tells you how small the individual dots—or pixels—are that make up the screen and the smaller the number here the better A large dot pitch value, 0 38 for example generates what you'd generously call a fuzzy picture A dot pitch of 0 28 is what you should look for. It yields a clear, sharp picture

Interlaced versus non-interlaced is more complicated An interlaced image is one that's drawn on the screen by two passes of the picture tube's electron gun (as opposed to a single sweep with a non-interlaced image) The gun hits every other horizontal line on the first pass, and then fills in the other lines on the second pass This can cause a tiny flicker which is virtually invisible However, after about half an hour at the computer you'll mysteriously feel like your eyeballs are falling out Even non interlaced monitors might "go interlaced" at higher resolutions but since few people use those, you get a nice clean picture at normal resolutions because the entire image is created on a single pass of the electron gun When it comes right down to it, just remember this interlaced bad non interlaced good. Unfortunately interlaced cheap, non-interlaced non-cheap.

That said, interlaced monitors are becoming more and more rare because they're just so darned hard to sell in the face of falling non-interlaced monitor prices.

Finally there's picture size. Just like a TV It's measured diagonally But manufacturers got together somewhere and agreed to measure the entire picture tube size not the size of the picture Good monitors disguise this by putting a mask over the front of the tube so your image seems to fill the screen edge to edge But if you measure what you see you'll find that your 17-inch monitor is only about 15 5 inches across your 15 incher is about 14 inches and your 14 inch monitor is closer to 12 inches

Again here, the bigger the better Fourteen-inch monitors are really cheap now, even good quality ones, because it's generally accepted that 15 inches is the minimum size for reasonable computing comfort. Of course, bigger is better but the price curiously rises exponentially in relation to screen size A really good 15 inch monitor might set you back $650 but an equally good 17 inch model could be $1 200 or more That's $550 for a mere two inches more!

Monitor buying tip. The monitor is what you're going to be staring at during virtually every hour you spend in the front of the computer so don't start going miserly here Fortunately, most systems come with something reasonable these days so you can focus more on watching out for a bad monitor as opposed to searching for a good one

Continued on page **27**

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- ✓ Bring the brilliance of PC VGA into your TV
- ✓ Second generation Flicker-Free filter
- ✓ Supports all IBM standard video modes and high color modes (256/32K/64K colors) 800 x 600 in NTSC and 800 x 600 in PAL
- ✓ Supports Macintosh standard modes (640x480, 21 or 35 KHz)
- ✓ Full Underscan and Overscan
- ✓ Output: Composite RCA Connector, S-Video Connector Input: VGA D-Sub Connector
- ✓ Directional Panning with zoom,
- ✓ Screen Freeze/Unfreeze

The latest in Video Converter Technology with more functions and flexibility !
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- ✓ Directional Panning with zoom
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A guide to reading ads

Continued from page ***25***

Multimedia, CD-ROM ready, MM package (or something)

Just about all computers for sale these days are multimedia ready and most of the components used are of a quality good enough for general consumer applications Generally that means you get a 6x or even 8x CD-ROM drive these days (that's good) a sound card of some sort (hopefully a 16-bit SoundBlaster compatible) and a couple of really crappy speakers—all installed and ready to go

One of the newer specs to come along, though is something you may see in an ad that refers to MPEG This is a video acceleration technology that can be implemented either as hardware (chips on the video card) or software (not as good) Essentially MPEG is a technology that helps eliminate any jerkiness in your computer video When configured properly with MPEG, your CD-ROM videos should run as smoothly as if you were watching TV MPEG isn t yet standard on every machine but it's common enough that you should be able to find lots of systems that include it

Multimedia buying tip: Don't expect to hear brilliant speakers but you should otherwise be getting a 16-bit SoundBlaster compatible sound card and a minimum 6x CD-ROM If anything describing the sound card mentions WaveTable synthesis, that's good: it means there are digital samples of real sounds built into the card (as opposed to digital reproductions) so you get much truer reproduction from software that looks for it—MIDI stuff, music composition software many games, etc.

Faxmodem

Things just keep getting better and better for us. Though not in every new computer a faxmodem is included with so many you might as well get one in your package too A faxmodem allows you to plug your computer into the telephone line and send and receive faxes, or dial into online services like Compuserve or into the Internet So, if you plan to explore the Internet you need a faxmodem

Faxmodem buying tip: ...all you have to do is make sure the faxmodem you're getting is either a 28.8 Kbps (kilobits per second) or the newest 33 6Kbps speed. Some of the current luxury models include voice functions (mail boxes, telephone answering machine capability, etc.) and other telephony features Those are nice things to have but they'll likely be a bonus found only in higher and systems. Most people don't need or use most telephony features anyway because they mean leaving your computer on 24 hours a day

"Includes $1,000,000 worth of software"

When we last went through this exercise software bundles were highly variable and equally negotiable to some degree These days however with the pre-installation of most or all of what you're going to get there's little room for barter

However though all computer systems come with something, you re going to find there's a big (read BIG) discrepancy between what software comes with different brands and sometimes even different models of the same brand

Software prices haven t followed their hardware counterparts and remain relatively expensive so you might carefully consider what you want to use your computer for and look for a system with a bundle that best accommodates that I wouldn't make a decision to purchase a system based on the software bundle but there s enough variation out there that you should be able to get a system that suits your needs with an equally accommodating parcel of goodies

Software bundle buying tip. Make sure you're getting current versions of everything being offered. And make sure you get all the manuals, packaging and registration cards. The least you should expect these days is to have Windows 95 and/or Windows 3.11 already installed and running (that saves you a couple of hundred dollars right there) along with separate software and utilities for all your bits and pieces (faxmodem sound card, video card, etc.) Also, some computer companies now pre-load all the software and provide a backup on a single CD-ROM That's okay. The CD-ROM will have an official registration of some sort that covers everything so you won't be abandoned by the service numbers. One final reminder: "$1,000 000 worth of free software" that you can't even give away, let alone use for something productive, ain't no bargain. ➤

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(AS SEEN AT COMDEX CANADA '96)

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PENTIUM 120 *upgradable to Pentium 166 Mhz*
16 MB *upgradable to 32 MB RAM*
1.35 GB *upgradable to 1.77 & 2.1 GB Removable HDD*
2 MB Video RAM 32-bit PCI Bus
TEAC *8X CD ROM Drive Ni MH Battery & Removable 1.44 MB Floppy Drive are*
Simultaneously Integrated.
16 Bit Sound Card with Stereo Speakers
2 x PCMCIA Type II One Type III
Centre palmrest Trackpad pointing device
SIR Infra red & MIDI/Game ports
Win 95 Keyboard
Windows 95 Preloaded (or DOS & Win 3.11)
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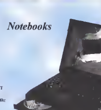

This Months' Specials :
11.3" Dual Scan $3,299 *lease $115/month*
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PENTIUM 120 *upgradable to* ***Pentium 200*** *Mhz CPU*
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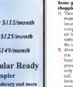

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Warranty
It's strictly buyer beware, buddy. Generally you can expect the cheapest package price to have the worst warranty. You pay a premium to buy from those small computer specialized stores, but you'll be glad you did when... I mean if... you have any problems. And don't think you won't. Computer problems rank right up there with death and taxes. Even if all the hardware is working properly, software can drive you nuts.

Don't expect the salesman at "Mega Warehouse" to help you, or even know how. He'll just tell you to bring your machine back so he can send it on an all-expenses-paid 12-week vacation to Siliconia.

Instead, be sure to establish a good relationship with the shop where you buy your stuff. You'd be surprised how many problems can be fixed during a 10-minute phone call with somebody who knows what they're selling... and backs it up.

Some general tips before you go shopping
1) There's no point in waiting "another few months" to get the latest and greatest because you'll end up never owning a computer that way. The latest and greatest is already in the final stages of development when the newest machines hit the shelves.
2) Always buy the best and fastest computer you can afford. I've been told a jillion times that "All I need it for is some word processing and to play a few old games," only months before I get the inevitable call: "Is there any way I can make it go faster without spending too much money?" or "I wanted to put MicroX SuperX on my machine but it says there's not enough RAM (or hard drive space or...)."
3) Don't let a salesperson snow you with lingo. That's the primary reason for me writing this article. Be sure you understand the capabilities of the machine and get a clear explanation of its expandability for future upgrades to virtually any component. This may seem premature but in all likelihood it's not.

Some handy questions
Keep these in mind when you're in the store (in no particular order):
1) Am I getting an 8 bit or 16 bit sound card? Is it SoundBlaster compatible?
2) Am I getting the latest versions of the software and do I get the manuals, packaging and registration cards? Are they installed and running or do I have to do that myself?
3) What's the warranty on the computer? Do you service it on-site or send it out? Can I call you if I have any questions? Do you have a guaranteed turnaround time for fixing and returning my computer if it needs repair? Do you have a loaner policy (free or otherwise) if you have to keep my computer longer than (whatever the "guaranteed" turnaround time is)?
4) Can I upgrade the CPU, and how fast a CPU will it take when I do upgrade?
5) How much RAM can the motherboard hold? What types of RAM will the motherboard support?
6) How much RAM is on the video card? Can I add to that at any time? If so, is the video RAM proprietary? How much does video RAM cost? ❑

That's why they call it a personal computer

BY JEAN ALLEN-IKESON

Imagine that you are a 15th century monk in an isolated monastery with a "treasure" of 30 books. Outside of prayer, these books are your world. A magician comes to visit and casts a spell. You are thrust into one of today's book superstores with not 30 but 5,000 volumes filled with photographs, maps and words you have never heard or read. When you purchase your first computer, you are that monk.

Your computer is like the physical store that contains those books. It is a tool with which software and the Internet come alive offering as revolutionary a change in your world as the monk experienced in his. Software development and access to information through channels such as the internet have come as far in 20 years as book publishing has in 500 years. Just as there are volumes on nearly every subject in the bookstores, there are software products or internet sites on a myriad of topics.

Confused by the technology? You have a right to be, but the rewards can be awe inspiring if you take the time to map out the territory

A portal on the world at large

So what is this Internet stuff and the Web and e-mail people keep talking about? The internet is like a large county library system with numerous satellite libraries linked by computer—but on a vastly larger scale Instead of looking in the card catalogue to see what books are available you can search for people and their interests and activities as well On the Internet you'll come into contact with people with ideas to share skills to test or questions that need answering—perhaps by you

Whatever your waking activities—from work, home or hobby—there are people around the world with the same interests who you can connect with on the Internet

It's the people not the technology, that makes the internet so terrific You will find people who are the antithesis of the violence and anti-social behavior you see on the news every night You can get help to find an antique car part a quilt pattern help your kids find out about an obscure village in France watch a comet's progress in real time share parenting ideas or locate the names of great grandfather's ancestors. (*But let's not forget that the Internet has its darker seamier side too. Whatever you find in the world, warts and all you'll likely find a correlate for on the Internet —Ed*)

Getting hooked (up)

How do you get all this? Buy a computer with a modem and subscribe to an Internet service provider (ISP).

A modem is a piece of equipment inside your new computer (you can also buy an external modem), which connects to a telephone line and allows your computer to send—and receive—digital information to other likewise-equipped computers across the telephone line An ISP is connected to the global interconnected network of networks called the Internet When you connect to your ISP with your modem your computer becomes a part of that network.

24 hour mail service

One service available with an Internet connection is e-mail, which is short for electronic mail

So what is so good about that? First outside of what you pay for an ISP connection (about the same as basic phone service), ➤

UNLIMITED
Internet Access
AS LOW AS $9.99 PER MONTH
NO OTHER COSTS
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$9.99 PER MONTH If you pre-pay for 3 months, The 4th month is FREE

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there are no stamps to buy or lines to stand in at the post office Just like a letter you have an address such as "anyone@tcp.ca"—which is short for a person named "anyone" at "tcp" or *The Computer Paper*, in "ca," or Canada. Enter that, then type your note or letter, click a key on the keyboard and poof! it's sent About 15 minutes to an hour later it is in the receiver's mailbox But the other person can read it at his or her convenience E-mail does not ring during supper or while you are in the shower But this is one-on-one communication.

The club is meeting here tonight

For one-to-many interaction, you can participate in newsgroups or forums These are like clubs for topics such as gardening or stamp collecting or diseases or parenting—but instead of meeting in a community centre or church hall they meet via the Internet.

One person serves as the hub Everyone sends messages to or receives messages from that person's computer This is how it works: you send a message to the hub's e-mail address with only the words in the message "subscribe (this-hobby) " Then a few times a week or even daily you receive a collection of questions, answers and discussions that others have offered to the group To put in your own two cents, you e-mail the hub with your question or comment. But what makes these so terrific is that instead of perhaps having access to only a few people in your geographic area interested in the same topic, you are in contact with hundreds from all over the world

For example, I grow orchids to keep from going crazy over the winter. I belong to two Internet newsgroups the Orchids List Digest, which is international and Orchids-can, which is primarily about orchids, orchid growers and activities in Canada I also belong to the Royal Botanical Gardens Orchid Society but it only meets once a month and members are a long-distance call away

With these computer groups, I can locate a plant I have always wanted, ask about a new potting media I saw used at another club's show or find people who will trade pollen to help conserve endangered species. I have "friends" in Belgium South Africa (this person sent stamps to my youngest son and articles for our society newsletter to me), Saskatchewan and Texas

Newsgroup discussions are often lively and the willingness to help and share defies the dog-eat-dog mentality we're always told is the heart of 20th century culture.

For people in isolated areas, a phone connection to the Internet makes them an instant member For example Steve Saunders in Nova Scotia posted photos of elegant orchid displays on the Web within a few days of the national Canadian Orchid Congress in Halifax this past Fall With children in school, I could not go But thanks to Steve, I was still able to view the show anyway

Using my computer I can also send a photo of an orchid I m having a problem with to a special section of the Orchid List Digest and receive a diagnosis the same day from someone thousands of miles away

And there are other ways computers help with my orchid growing I maintain a "database" of my orchids using a special program called Orchidata-3 (The software from Computer/Management Services requires Windows/DOS and sells for US$66.50, plus shipping and handling) A database is a special group of programs that collects sorts and collates items numbers or other information A common use for a database is to maintain a mailing list that can be sorted automatically by name, province, affiliation etc

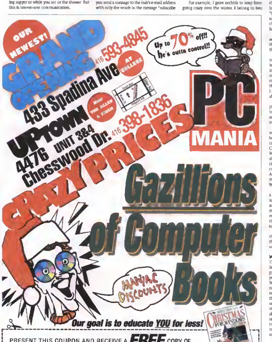
With my orchids, I use a database to keep a record of the name, parents flowering history, repotting and most important where I acquired the plant Why do I need the last item? Orchids are becoming endangered all over the world This provides evidence that they were obtained from legitimate sources and not collected illegally or smuggled

I can also print a report with the database that sorts all plants blooming in the spring so that I can remind myself to repot and fertilize without jeopardizing flower spikes.

Web world wide

The Web is the third big player on the Internet in addition to e-mail and newsgroups. The World Wide Web is like indexed yellow pages for businesses and individuals. But instead of a small box advertising a business or service "Web pages" can be almost any number of full pages (but are usually less than 10) The pages tell you what a business or organization has to offer or what an individual is interested in As a perk, there are always items marked by bold type or a different color type By clicking on one on your computer screen with the pointer that is controlled by your "mouse," you can jump to another Web page for that related item.

For instance, Ruthe Stowe (her Internet address is http://home.netinc.ca/~rstowe/) in Hamilton is interested in weaving. On her page she has links to the weaving guild she belongs to and the weaving newsgroup she subscribes to. She also has other links to weav



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ing friends, resources such as looms, software, classes events, etc along with other things or places she finds interesting such as textile museums. This is one of the best features of the Internet and Web when you become interested in a topic or hobby such as doing stained glass antique cars, photography, women's issues political causes etc. the Web offers access to clubs, resources, technical information and people who share your enthusiasm.

The Web is like a huge library that is stocked with books, videos and people The people are as numerous as books in a typical library For instance Ruthe Stowe has a counter to indicate how many times her site has been visited In the last six months she has received more than 4 000 visitors This does not mean however that her computer has to run 24 hours a day Her Web pages are kept on the computer that provides her Internet account for all to access.

Web sites often contain information to help you with a project. For example one offers step-by-step help to build your own computer It also contains information on locating and buying parts (http://www vernet com/pc/)

The family roots phenomenon

Yet another Web site is an index to hundreds of genealogy (the study of your family ancestors) sites on the Internet including a number of Canadian ones. One site Barrelful of Genealogy Links, has registered over 56,000 callers in the last six months (I am number dropping only to give you an idea of how many people worldwide are communicating and sharing.)

None of these three sites (the weaving site build your own computer site and this genealogy site) are commercial All have been published because someone had an interest and wanted to share it

Software programs you can purchase sometimes also have built in links to the Internet so that you can add or update information Two of the most common genealogy programs for example have Internet links for research Family Gathering (works with both Windows and Macintosh computers and retails for about $62) from Palladium links to chat rooms and discussion groups hosted by experts a genealogy reference library and a fee-for-service genealogical research service.

The program itself does far more than penciling in a few names and dates You start with an on-screen form in which you type names, dates places and events such as birth, burial and where you found the information for each ancestor. You can add photos or scans of documents such as birth certificates or old land records (Scanners are computer add-ons that work like photocopiers but put the image on your screen and into your computer's memory The image can be stored or printed out) Besides doing Internet research directly from this program, you can also search Internet sites or newsgroups such as Roots-L for more information.

Family Tree Maker Deluxe from Broderbund which sells for $112 and requires Windows (a Macintosh version will be available early this year), comes with millions of names in an index that you can search by simply typing in a name and asking your computer to find all the references to that individual.

The company also produces a large number of research CD-ROMs with census and other genealogy indexes immigration records and millions of people in family trees that have been submitted to share with other researchers.

Continued on page **33**

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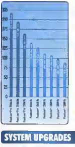

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A personal computer

Continued from page **31**

They have also recognized that many of their CDs were primarily American and have started to release data for other countries.

First was an 18th century Irish census. Last month Broderbund released two for Canada the index to the Ontario 1871 census with 375 000 names (this disc No 116 sells for $28) and the Canadian Genealogy Index 1500s-1900s, with two million names gathered over 20 years from more than 1 000 sources (it sells for $42 and is disc No 118)

Many genealogy societies in Canada have Web pages with links to numerous additional research sources. Best known is the Ontario Genealogical Society

With these programs you can ask your computer to do what it does best organize data. By choosing from a menu you can have an ancestor tree of a specific number of generations with photos dates and places—as much or as little information as you choose to add. Start with any name and choose ancestors or descendants. Then ask your computer to print it out with a fancy border so that you can frame it or add it to a family picture album It will also take all the information you have added and collate it in a family journal or biography

So with these programs, you can research, organize what you have found, and publish it in a professional-looking form.

Hobbies and crafts

One final example If you are a crafts person you will know how tedious designing craft items by hand can be With computer programs you can play with design features change them with a click of the mouse add or take away color resize etc. and estimate what the end product will look like

For instance a program called Stitch Painter 2.0 from Cochenille (run by Canadian Susan Lazier) has been developed for any textile craft design that uses a grid from weaving or needlepoint to cross stitch to knits to beading (it requires Windows or Macintosh and sells for $225 the beading module is priced at $40) Make a design on the grid, then flip rotate, resize or repeat it somewhere else on the project using any of 250 different colors

Two other Canadians are getting in the act with weaving software: ProWeave from Cameron Fiber Arts (available for Windows 3 1 or 95 for $295 or $255 for Macintosh) and Fiberworks PCW from Fiberworks ($27 for the demo version for PCs with a Windows and Macintosh version due out this spring)

If you weave then you know that throwing the shuttle back and forth is not the hard work. Rather, it is choosing and developing a design and transferring it to the loom when you thread the warp You may draw a design on graph paper but that only tells half the story With Fiberworks, you can instantly see what the back of the project looks like It will also drive electronic looms. You can experiment with colors until you get the shade and hue right Then go to the dye pot and dye your yarn to your own specifications You are also able to make corrections anytime on the computer rather than painstakingly correcting with needle weaving on the loom later Or print the design to share it with friends in your weaving guild If you teach weaving it is a great tool to display just the threading and treadling draft, leaving the drawdown a blank grid, or reverse these values to demonstrate fabric analysis showing interlacement or structural drawdown.

Proweave is another design program for hand looms that will drive electronic looms It has a wonderful custom color editor so that you can match specially dyed yarns to your design. It will also calculate how many heddles you need for each harness which saves running out in the middle of warping

Dini Cameron also runs a computer weaving design workshop from her home near Ottawa The cost is $250 for five full days plus $25 per day room and board Here is how computers have affected a craft thousands of years old She uses computers to develop new methods of design that were not possible before Experimentation on this scale would just be too complex without computers ❑

Contacts

Broderbund Tel 800-474 8696
Web site http://www familytreemaker com
Cameron Fiber Arts Tel 613-838-5000
Web site http://www magi com/~proweave
Canadian Orchid Congress: Web site http://www con. cs dal ca/Recreation/OrchidSNS/coc96shu.html
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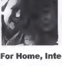

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Thinking small: Making your first computer a portable

BY GEOF WHEELWRIGHT

If you have never had the pleasure of owning a personal computer and are now convinced that you really need one do not limit your horizons to a standard desktop personal computer.

The latest breed of notebook computers are capable of doing everything their larger desktop siblings can do, while offering the virtue of being able to be used anywhere or anytime. They typically come with hard disk capacity of at least 800 MB between 8 MB and 16 MB of memory high resolution color displays, Pentium processors rated at 100 MHz or better and two PC card slots for adding on extra functionality.

In fact, most notebook computers are just as happy to work like a desktop computer as they are sitting in front of you on a plane. If you plug a full-size keyboard an external mouse and an external monitor into your notebook computer you can use it just as if it were a desktop system. And when you unplug the external goodies you can take it on the road with you without worrying that you are leaving any data behind "on the main system."

In short for most day-to-day computing tasks there is little that you cannot do on a standard notebook PC that you could on a desktop computer with similar specifications. The main difference is that a notebook computer uses a different technology (PCMCIA or PC Card technology) to allow for internal hardware expansion while desktop computers have "slots" into which you place printed circuit boards.

For most general purpose expansion (such as adding modems video capture boards or network cards), there are PC Card versions of desktop expansion cards—with the only difference being that you'll tend to pay more (likely 50 percent more, but as much as double) for the PC Card version than for a standard expansion card for a desktop computer.

In fact that is still generally true for notebook computers, which often command a premium of 30 per cent or more over the desktop equivalent. This means that if you want a notebook computer as your main system, you should have a compelling reason for that choice.

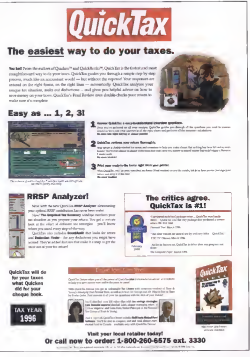
The best reason is that it will allow you to be more productive or save you the cost of having one computer in the office and another at home. For some users the cost of a notebook computer can often be partially (or even fully) funded by their employer if they are to be used at both work and home.

Your reasons for choosing a notebook computer as your first system will go a long way to determining what kind of system you want. Whatever use you are planning, make sure that you take the following issues into account in addition to the basic questions of processor speed hard-disk size, memory and PC Card expansion.

Long battery life If you plan to work while you are on a plane boat, bus or train, there is nothing more frustrating than running out of battery power just as you are completing a crucial bit of work. To ensure that you don't run short of battery power, look for a laptop computer that runs on lithium ion batteries (which offer the longest life) and has slots for two rechargeable batteries, so that you can work for an extended period without having to swap batteries.

Screen clarity and readability: No matter how light and fast your laptop computer is, none of it will do you any good if you can't read the screen.

Keyboard size and a pointing device: Once again a laptop computer can have all the wonderful features in the world but if you can't enter information and commands into it, the rest of the system is no use. Spend a little time trying out the keyboard and pointing device (usually a trackball, mouse, "pointing stick" or touch pad) on your prospective laptop before you buy it ❑



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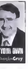
Tips to save money with an RRSP



ON YOUR OWN

by Duncan Gray

The annual RRSP season frenzy is upon us By now, you have probably been bombarded by the advertising campaigns offering mutual funds and GIC's for your RRSP it can be very confusing to decide what options are the right ones for you However, one fact is certain if you are self-employed, it is particularly imperative that you plan to look after your self in retirement by maximizing your RRSP "contribution room" every year Nor only will that cause your RRSP to build quickly, but it will give you the tax deduction write off against your other taxable income in that year, thereby reducing your tax burden

Otherwise, you only have the Old Age Security (OAS), which is being revamped and clicks in at age 65, and the Canada Pension Plan (CPP) income that you might have earned by being an employee of your own company You can start taking out a CPP pension at age 60 under certain circumstances Whether you are counting on one or both forms of pension for retirement income, it will probably not be enough to maintain the lifestyle and quality of life that you would need or want.

In last month's column, I mentioned how to negotiate .5 percent more for a GIC than the financial institution's posted/published rate of interest Your own financial and investment plan, needs and risk tolerance will dictate what investments you buy for your RRSP in view of the current low interest returns on GIC's and other fixed income funds, many people consider buying some form of mutual funds as part of their investment portfolio If you do decide to buy mutual funds here are some tips on how to save money by knowing the areas where you can attempt to negotiate a better deal

Switch fees

When you move your investment from one fund to another, there is often a switch fee charged of up to two percent For example if you were transferring $10,000 from a bond to an equity fund, the fee would be $200 However, if you are dealing with a mutual fund company with a family of funds (e g some fund companies have over two dozen funds), than you want to have the switch fee waived for any transfers within the fund company However, this is discretionary, so if you don't negotiate you won't save, and therefore make, the extra money

Front-end Load Fee

This is the sales fee imposed at the time the mutual fund shares are purchased it is called an acquisition fee or front-end load charge Fees could range from one to eight percent (although one to five percent is the average range) and are a negotiable charge it depends on the amount invested, the nature of the investment and other variables You want to discuss this openly with the person involved and do your comparative research to determine your investment fee comfort zone Naturally the adviser wants to have some incentive and be motivated However, every percentage point that you pay is effectively reducing your future return on investment so negotiate assertively to pay the least possible Ask what is the least commission that they would charge to get or keep your business

Reer-end load fee

Another way sales commissions are paid is to charge a redemption fee or rear-end loading charge This is paid at the time that the money is withdrawn from the fund. Redemption fees could be based on a fixed amount per transaction (eg $15 to $30) or a percentage of either the amount of the initial investment or the current market value (net asset value) of your investment—it's frequently the latter This amount could range from 4 5 percent to 10 percent in the first year, with a sliding scale diminishing to no fee if the funds are kept in for a period that could range from five to 10 years, depending on the fund company and individual fund Also, many funds permit you to take out up to 10 percent of the fund value each year, without penalty You want to check on all the above matters prior to purchasing the fund. These fees and charges should be in the prospectus The reality, however, is that most people don't read the prospectus thoroughly, let alone understand it, so ask Some redemption fees are negotiable and some are not, because they are locked in by contract in the prospectus.

Continued on page 39

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INTERNET

Desktop replacement notebooks

A look at the latest generation of powerful portables

BY STEVE HALINDA AND TIM BINGHAM-WALLIS

Models reviewed
AST Ascentia P50
Compacon
Dell Latitude LM P133ST
Dell Latitude XPi P150ST
Eurocom 6200T
Hewlett Packard OmniBook 800CT
HyperData 758MX
IBM ThinkPad 560
IBM ThinkPad 760ED
Impulse Ouqnets
KTX 880-100
KTX-880-133
NEC Versa 4230
NEC Versa 6030H
Panasonic CF 25
Toshiba Tecra 500CDT

The choice between purchasing a desktop or a notebook computer is a common dilemma Do you want to give up the raw power of a desktop computer for the portability of a notebook? Depending on your computing needs the question can be a no-brainer For many of us, the lower cost and greater performance of a full size desktop computer far outweigh the benefits of portability However for people who need instant access to information in places from board rooms to fishing boats a notebook is a necessity Preferably the machine should be able to handle all the tasks demanded of the desktop computer matching as closely as possible the specifications and performance of the latter

This month we asked for notebook machines that can be considered replacements for the desktop PC, and we received many that fit the bill in terms of specifications. The mainstay of our survey this month are powerful 133 MHz machines configured with items such as 2 GB hard drives, 8x CD-ROM drives and TFT (also known as active matrix) screens.

However, our benchmarks suggest the latest generation of travel companions still miss the mark in the area of performance Remember, no matter how much you spend a desktop PC in any given class will always outpace a notebook by a large factor On BAPCo Sysmark32, a score (Sysmark) of 100 is equal in performance to a base-configured Pentium 100 MHz desktop machine Most of the notebooks touting higher central processing unit (CPU) speeds failed to reach this level

Still, the notebook market has seen several incremental improvements over the last several months. Vendors are offering and shipping them with faster processors larger screens and hard drives and faster CD-ROM drives

Within the category of desktop replacements, there is still a great amount of diversity to be considered. Notebooks exist to fit a number of needs For example in this survey we have the ultra slim and lightweight ThinkPad 560 from IBM alongside the bettle-proof Panasonic CF 25 and Dell's souped up Latitude XPi 150 The ThinkPad is designed for the traveling executive the Latitude XPi 150—with all its bells and whistles—is suited for the contemporary office and the Panasonic is designed for heavy-duty field work in an industrial environment

Expandability and built-in functionality are a consideration when choosing a new notebook. Many notebooks sacrifice internal floppy and CD-ROM drives in the interest of downsizing The reduced size of these gems can be beneficial to the commuting professional but the lack of removable storage can be an equal menace. The docking station options for a given notebook are also worth investigating especially if you are going to use it to replace a desktop.

The pointing device is another area that bears some serious consideration. While touchpads are far and away the most widely used mechanism they are not necessarily the best for each individual Luckily we still have some choice in this area with a couple of vendors offering trackballs and eraser head type devices, which many people prefer Some notebooks have unique options like an infrared remote control mouse (which we've been referring to lately as the "IR wand")

There are two popular types of display screens for notebooks today—DSTN and TFT DSTN is the cost-effective option but it does not offer the clarity or brightness of TFT DSTN displays are back-lit and cannot be viewed at an angle very well whereas TFT displays produce brighter, sharper images viewable from several angles.

The testa

We used BAPCo Sysmark/32 running under Windows 95 to benchmark the notebooks This is a grueling test and invariably some computers fail to make it clean through the benchmark. Notebooks in particular have a hard time with the benchmark as they use more proprietary schemes than desktops This isn't to say that a computer that can't clear the benchmark is no good but it is indicative of possible incompatibilities between the hardware and certain software Making sense of the benchmark results is quite easy The higher the Sysmark32 score, the faster the system The reference system as mentioned earlier is a Pentium 100 MHz system which is equal to a score of 100 A system that scores 200 is twice as fast.

AST Ascentia P50

AST's new line of notebooks includes this model P50 A full-featured unit, it comes with a Pentium 133 MHz processor and 256K of Level-2 cache. Our test unit came with 16 MB of RAM and a large 2 1 GB hard drive The P50's 12 1-inch active matrix screen produces sharp images at resolutions up to 800x600 internally with 2 MB of video RAM The CD-ROM and floppy drives are interchangeable, meaning you can use them both internally but only one at any given time

As part of the complete multimedia experience the system comes with built-in, 16-bit sound support and a 28.8Kbps faxmodem It's becoming quite common for manufacturers to integrate modems into the notebook itself thereby freeing up one PC card slot, which can be used for other devices The P50 also has infrared (IR) capabilities which will allow you to communicate with other notebooks or IR-capable devices without the need for cables. At $6 490 this machine is very capa-

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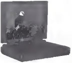
ble, and packed with features that certainly allow us to consider it a desktop replacement.

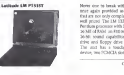
Performance for the most part, was on par with other notebooks in our survey but there was a problem with one of the benchmarks as can be noted on the chart. In all likelihood this is an incompatibility that exists somewhere between that piece of software and the computer or a simple bug When we encounter such a problem, we do whatever possible to overcome it by means of a workaround, however sometimes despite our best efforts we are still unable to get things to work 100 percent The biggest problem when this occurs is that we aren t able to obtain an overall Sysmark for the machine What readers should do in these cases is to look at the individual numbers and estimate what the machine would most likely score on this particular section when taking into consideration its other scores and overall system configuration We must stress this because it would be neither fair nor wise to discount a particular system simply because there was a glitch with the benchmark suite

Compucon



Compucon systems of the desktop variety are well known to our Test Lab This time however we were sent a notebook bearing the Compucon name At first glance it appeared to be a good all-in-one unit The system is powered by a 133 MHz Pentium processor with 256K of Level 2 (or secondary) cache The RAM configuration was slightly larger than we had asked for, at 24 MB instead of 16 MB The 12 1-inch active matrix screen is sharp and easy to read producing clear images in both text and graphics applications at resolutions of 800x600 The system contains a 1 GB hard drive an adequate amount of storage for most portables. Both the CD-ROM and floppy drives are internal, saving you from having to swap back and forth While this may be extremely convenient, the tradeoff comes in the form of extra carrying weight The price tag on the unit is $5 199

Dell Latitude LM P133ST



Never one to break with tradition Dell has once again provided us with two machines that are not only complete but are extremely well priced The LM 133 runs on a 133 MHz Pentium processor with 256K of level 2 cache, 16 MB of RAM an 810 MB hard drive and has 16-bit sound capabilities The 6x CD-ROM drive and floppy drive are interchangeable The unit has a touchpad as its pointing device, two PCMCIA slots, and IR capabilities

Continued on page **41**

Tips to save with an RRSP

Continued from page ***37***

Whatever decision you make, it is prudent to seek the advice of a professional financial planner and tax accountant You want to make informed, objective decisions that minimize the potential risk and maximize the tax benefits ❑

Douglas Gray, LL.B is a Vancouver-based speaker, lawyer, columnist and author of 15 business books plus a real estate investment software program His books include Home Inc The Canadian Home-Based Business Guide *and* The Complete Canadian Small Business Guide *(both by McGraw Hill Ryerson) and* Start and Run a Profitable Consulting Business *and* Marketing Your Product *(both by Self-Counsel Press)*

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Desktop replacement notebooks

Continued from page ***39***

With 1 MB of video RAM, video resolutions up to 800x600 are possible on a sharp-looking 12.1 inch active matrix screen. The lowest priced notebook in our survey, this Latitude LM 133 is yours for $4,099 with a one-year warranty.

Dell Latitude XPi 150ST

Dell's latest creation is the XPi 150ST. It's the very first notebook with a 150 MHz processor to have come through our Test Lab. It wasted no time making a good impression on us. Our test unit was equipped with the standard complement of 16 MB RAM and 256K of pipelined cache. This particular model uses a trackball as its primary pointing device as opposed to the ever-popular touchpad found among many of the notebooks we've tested.

The 150ST features a built-in 6x CD-ROM drive and a built-in floppy drive, housed one on top of the other. The hard drive in this unit is larger than its cousin, the LM 133. At 1.3 GB, it'll provide you with plenty of storage while you're on the road. It's also the first notebook we've seen to come with a PCI 128-bit video controller. If graphics-related applications are your thing, then this notebook was designed for you. And it can be yours for $5,499 with a three-year limited warranty.

Eurocom 6200T

Another all-in-one system, the 6200T from Eurocom has everything you need all under one roof. At the heart of the machine is a Pentium 133 MHz processor and 256K of secondary cache, 16 MB of RAM and a 1.2 GB hard drive. Your multimedia needs are met with a built-in 8x CD-ROM drive and 16-bit sound capabilities. The floppy drive on this model is also built in for your convenience. The 12.1 inch active matrix screen can produce impressive looking images at 800x600 resolution with 2 MB of video RAM. Whereas most notebooks give you two PCMCIA slots, Eurocom's 6200T goes a step further, offering you three. With this configuration, it's possible to have two type-II cards, and one type-III in the notebook at the same time. With standard configurations on most notebooks you're allowed to use two type II cards, or one type-III at the same time.

The notebook also gives you the capability of outputting your video to a television set. A port on the back of the unit makes it very easy to accomplish this—particularly useful if you're in the mood to take out your frustrations on your friends over a friendly game of Quake on your 30-inch TV. Now that's fun. Priced at $5,299, the system comes with a one year warranty with the option of extending to two or three years.

Hewlett Packard OmniBook 800CT

Hewlett Packard's latest in its OmniBook lineup is the 800 series. Our test model was an 800CT which managed to throw a few surprises our way. When you first look at an OmniBook you see an ultra-slim, very light weight notebook. It's hard to imagine the power that lurks behind that gentle exterior. The 800CT is powered by a Pentium 133 MHz processor with 256K of external cache on board.

Our test unit was configured with 16 MB of EDO RAM, which is expandable to 48 MB and a 1.4 GB hard drive. With a 10.4-inch active matrix screen, graphics quality was superb. Video consists of a 32-bit PCI chip with a 128-bit graphics controller from NeoMagic. With 1 MB of video RAM, resolutions of 1024x768 are possible when an external monitor is used.

As is common with HP OmniBooks, you get a built-in two-button mouse which pops out at the right side of the computer at the press of a button. Certainly different from touchpad devices but very similar to a desktop mouse, except for the range of motion allowed. The mouse connects to the computer with a cord that is 9 cm (3.5 in.) long. If you happen to pull too far, don't worry—the device is completely removable.

The 800 series also features a docking station where you will find a port replicator including SCSI 2 and SVGA out ports, support for an industry-standard half length 16-bit ISA card or a 32 bit PCI card. The docking system supports what is commonly referred to as "hot docking" which means that you can dock and undock the system while under power in an operating system environment. Due to dock's slim nature, the 4x SCSI CD-ROM and floppy drives are external.

Performance on the OmniBook was on the higher end of the scale, with an overall Sysmark of 92. The 800CT sells for $6,490 as configured, and comes with a three-year warranty.

HyperData 759MX

The second lowest priced system in this survey, HyperData's 759MX is a great value if you're looking for a notebook that leaves little to be desired. The configuration we tested consisted of a 133 MHz Pentium processor, 256K cache, 16 MB of RAM, a large 2.1 GB hard drive and 16-bit sound. On the side of the unit you'll find both a 6x CD-ROM drive and floppy drive built-in. The video subsystem consists of 2 MB of EDO RAM. ➤

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NOTEBOOK SURVEY

	AST Ascentia P50	Compucon	Dell Latitude LM P133ST	Dell Latitude XPi P150ST	Eurocom 6200T	Hewlett Packard OmniBook 800CT	Hyperdata 759MX	IBM 560
Processor	Pentium 133 MHz	Pentium 133 MHz	Pentium 133 MHz	Pentium 150 MHz	Pentium 133 MHz	Pentium 133 MHz	Pentium 133 MHz	Pentium 133 MHz
Cache	256K	256K	256K	256K pipeline	256K	256K	256K	None
MB RAM (standard/max.)	16/40	24/40	16/40	16/40	16/72	16	16/64	16/40
Screen (size/type)	12.1/TFT	12.1/TFT	12.1/TFT	12.1/TFT	12.1/TFT	10.4/TFT	12.1/TFT	12.1/TFT
Max. resolution	800x600	800x600	800x600	800x600	800x600	800x600	800x600	800x600
Video RAM	2 MB	2 MB	1 MB	1 MB	2 MB	1 MB	2 MB EDO	1 MB
Hard-disk size	2.1 GB	1.0 GB	810 MB	1.3 GB	1.2 GB	1.4 GB	2.1 GB	1.08 GB
CD ROM drive	Removable	Internal	Removable 6x	Internal 6x	Internal 6x	External 4x SCSI	Internal 6x	None
Floppy drive	Removable	Internal	Removable	Internal	Internal	External	Internal	External
Audio	16-bit	16-bit	16-bit	16-bit	16-bit	16-bit	16-bit	16-bit
PC Card slots	2	2	2	2	3	1	2	2
Keyboard	87 key	86 key	87 key	85 key	86 key	85 key	86 key	85 key
Pointing device	Touchpad	Touchpad	Touchpad	Trackball	Touchpad	Pop-out mouse	Touchpad	Trackpoint
Dimensions WxDxH cm	30x22.9x5.5	29.5x23.1x5.7	29.7x22.7x4.8	28.1x23.3x7.9	30.2x23.4x5.3	28.2x13.3x3.8	30.2x23.5x6.5	29.8x22.2x3
Dimensions WxDxH in	11.38x8.98x2.15	11.6x9.1x2.25	11.7x8.9x1.9	11.06x9.18x3.08	11.8x9.2x2.1	11.1x7.2x1.5	11.7x9.3x2.2	11.75x8.75x1.2
Palm rest, cm (in.)	6.4 (2.5)	10 (4)	7.4 (2.9)	9.5 (3.75)	8.9 (3.5)	None	7 (2.75)	(7.9) 3.1
Weight, kg (lb)	3.2 (7.1)	2.8 (6.18)	3.1 (6.82)	3.3 (7.3)	3.7 (8.14)	3.74 (8.25)	3.5 (7.7)	1.9 (4.1)
Battery type	Lithium Ion	NiMH	Lithium Ion	Lithium Ion	NiMH	Lithium Ion	NiMH	Lithium Ion
Infrared port	Yes	No	Yes	Yes	No	Yes	Yes	Yes
Extras	Internal 28.8 modem	Video-to-TV port			Video-to-TV port		IR mouse	
Windows Benchmarks								
Desktop publishing	86	N/A	77	78	73	85	85	N/A
Desktop graphics	123	N/A	118	111	149	110	84	N/A
Desktop presentation	N/A	N/A	74	86	67	87	75	N/A
Word processing	90	N/A	75	79	71	88	67	N/A
Spreadsheet	108	N/A	107	106	90	108	77	N/A
Database	86	N/A	83	71	65	79	81	N/A
Overall Sysmark32	N/A	N/A	85	90	77	82	71	N/A
Contact	905-507-0456	604-279-9886	800-624-9897	800-624-9897	613-224-6122	800-387-3867	800-827-4777	800-465-7999
Suggested retail price	$6,400	$5,186	$4,099	$5,499	$6,299	$6,400	$4,264	$6,399
Warranty	3 years	3 years	1 year	3 year	1 year	3 years	3 years	3 years

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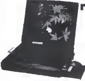
NOTEBOOK SURVEY

	IBM 760ED	Impulse Duenote	KTX 880 100MHz	KTX 880 133MHz	NEC Versa 4230	NEC Versa 5030H	Panasonic CF-25	Toshiba 500CDT
Processor	Pentium 133 MHz	Pentium 133 MHz	Pentium 100 MHz	Pentium 133 MHz	Pentium 133 MHz	Pentium 133 MHz	Pentium 133 MHz	Pentium 120 MHz
Cache	256K	256K pipeline	256K	256K	256K	256K	None	256K pipeline
MB RAM (standard/max.)	16/104	16/48	8/80	16/80	8/40	16/48	8/72	16/144
Screen (size/type)	12.1/TFT	11.3/TFT	10.4/TFT	12.1/TFT	10.4/TFT	12.1/TFT	10.4/TFT	12.1/TFT
Max. resolution	1024x768	800x600	800x600	800x600	800x600	800x600	800x600	800x600
Video RAM	2 MB	1 MB	1 MB	1 MB	1 MB	2 MB	1 MB	2 MB
Hard disk	2.1 GB	2.1 GB	1 GB	1 GB	1 GB	1.2 GB	1.3 GB	1.2 GB
CD ROM	Internal 6x	Docked 6x	Removable 6x	Removable 6x	Removable 6x	Removable 6x	None	Removable 6x
Floppy drive	External	External	Removable	Removable	Removable	Removable	Internal	Removable
Audio	16-bit	16-bit	16-bit	16-bit	16-bit	16 bit	16-bit	16 bit
PC Card slots	2	2	2	2	2	2	3	2
Keyboard	85 key	86 key	87 key	87 key	83 key	83 key	87 key	82 key
Pointing Device	Trackpoint	Touchpad	Touchpad	Touchpad	Touchpad	Touchpad	Touchpad	Trackpoint
Dimensions, WxDxH cm	29.7x21.1x5.1	30x21.9x5.8	29.8x23.5x4.8	29.8x23.5x4.8	29.7x23.8x5.3	29.7x24.1x5.5	30x23.8x6.1	30x23.6x5.8
Dimensions, WxDxH in	11.7x8.3x2.0	11.8x8.6x2.3	11.75x9.25x1.8	11.75x9.25x1.8	11.69x9.4x2.1	11.69x9.49x2.17	11.8x9.3x2.4	11.8x9.3x2.3
Palm rest, cm (in.)	4.8 (1.9)	8.4 (3.3)	8.6 (3.4)	8.6 (3.4)	8.2 (3.25)	8.3 (3.25)	9.5 (3.75)	8.9 (3.5)
Weight, kg (lb)	3 (6.7)	3.1 (6.8)	2.9 (6.38)	2.9 (6.38)	3 (6.58)	3.2 (7.1)	3.2 (7.1)	3.6 (7.9)
Battery type	Lithium Ion	Lithium Ion	NiMH	NiMH	Lithium Ion	Lithium Ion	NiMH	Lithium Ion
Infrared port	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Extras	Int. 28.8 DSVD	Int.28.8 modem Int. 10BaseT				Internal 28.8 modem		Internal 28.8 modem
Windows Benchmarks								
Desktop publishing	90	81	87	88	73	85	N/A	66
Desktop graphics	111	115	96	86	93	116	N/A	89
Desktop presentation	104	101	78	88	89	104	N/A	77
Word processing	86	88	73	102	84	90	N/A	88
Spreadsheet	117	115	88	106	102	117	N/A	87
Database	85	82	72	84	85	88	N/A	65
Overall Sysmark32	96	98	78	81	87	100	N/A	75
Contact	800-465-7960	800-668-1111	905-940-0000	905-940-0000	800-366-0476	800-366-0476	800-742-8086	800-387-5645
Suggested retail price	$8,991	$5,455	$3,290	$4,590	$5,179	$6,589	$6,000	$6,299
Warranty	3 years	3 years	2 years	2 years	1 year	1 year	1 year	3 years



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and will allow resolutions of 800x600 internally or up to 1 280x1 024 when used on an external monitor. If your memory requirements should increase, the notebook will accommodate you with up to 64 MB of EDO RAM using four DIMM (dual inline memory module) sockets. The keyboard makes use of the popular Windows 95 keys and uses a touchpad for its primary pointing device.

A unique option on this notebook is the ability to use an IR (infrared) remote control mouse. This comes in real handy during group presentations. The same notebook will have a 10x CD-ROM drive available by the time you read this article. Priced competitively at $4 264, the unit comes with a three-year warranty.

IBM ThinkPad 560

Looking for a lightweight slim notebook? Consider your search over. IBM's ThinkPad 560 comes in at a mere 1 86 kg (4 1 lbs) and is only 3 cm (1.2 in) thick. It may be light and portable but it still packs a punch with a

133 MHz Pentium processor and 16 MB of RAM. The hard drive is 1 08 GB, the floppy is external and it features 16-bit stereo sound. There is no compromise made as far as the display is concerned. Equipped with a 12 1 inch TFT screen you get great looking text and graphics at the common 800x600 resolutions. It's also one of very few notebooks in this survey to make use of a trackpoint device, as opposed to the popular touchpad. Included with the system is a CD ROM of Lotus SmartSuite 96 to help you get down to business immediately.

The only complaint we have about this machine is the fact that it lacks a Level-2 cache. We've said it before and we'll say it again (and again and again) the Level-2 cache is a crucial part of any computer, be it a notebook or desktop. The performance gains far outweigh the money you'd save by not having one in your system. Unfortunately due to popular demand this notebook was very hard to come by, and arrived just after our test results were complete which is why you'll see "N/A" (not available) instead of a result in the benchmark portion of the Lab Test chart. This attractive and very light weight unit can be had for $6,399

IBM ThinkPad 760ED

This new ThinkPad 760ED from IBM introduces some new features not found in other notebooks (at least not yet). The driving force behind the machine is a 133 MHz Pentium processor with 256K of Level-2 cache. The standard complement of RAM consists of 16 MB which is expandable to a whopping 104 MB of the EDO variety. Multimedia is accomplished with an internal 6x CD-ROM drive and 16-bit sound system. The first thing that excited us about this notebook was the video system. The large 12 1-inch TFT display is not only sharp and vibrant, but thanks to a well-designed graphics engine, the 760ED can produce images of up to 1 024x768 internally (without the need of a monitor). Total Image Video with MPEG 2 support gives you smooth full-motion full-screen videos for a superb multimedia experience.

After we'd finished raving about all that, we discovered the built in 28.8Kbps faxmodem. We thought hey another bonus. After further investigating we were surprised to

Continued on page 46

TOSHI				
110CS	100	6/810	11.3 / 600 X 600 Dual Scnn	$2173
110CT	100	6/610	11.3 / 600 X 600 Active	$2710
200CDS	100	8/810 CD	11.3 / 600 X 600 Dual Scnn	$2673
420CDS	100	6/810 CD	11.3 / 800 X 600 Dual Scnn	$2651
420CDT	100	8/1.3 CD	11.3 / 800 X 600 Active	$4399
430CDT	120	16/1.3 CD	11.3 / 600 X 600 Active	$4563
660CT	150	16/1.3 CD	11.3 / 800 X 600 Active	$6499
500CS	120	16/1.3	12.1 / 800 X 600 Dual Scnn	$3989
500CDT	120	16/1.3 CD	12.1 / 600 X 800 Active	$5319
510CDT	133	16/2.1 CD	12.1 / 1024 X 768 Active	$6299
730CDT	150	16/2.1 CD	12.1 / 1024 X 768 Active	$7643
IBM				
560	100	6/810	11.3 / 800 X 600 Dual Scnn	$3558
560	120	8/810	12.1 / 800 X 600 Active	$5031
560	133	8/1.1	12.1 / 600 X 600 Active	$5700
760ELD	100	8/610 CD	12.1 / 600 X 600 Active	$5788
760EL	133	16/1.1	12.1 / 800 X 600 Active	$6054
760ED	133	16/2.1 CD	12.1 / 800 X 600 Active	$8010
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4200	100	6/610 CD	10.4 / 800 X 600 Active	$3568
4230	133	8/1.0 CD	10.4 / 600 X 600 Active	$CALL
6000H	100	16/1.1 CD	11.3 / 800 X 600 Active	$5242
6030H	133	16/1.35 CD	12.1 / 800 X 600 Active	$CALL
6030X	133	16/1.44 CD	12.1 / 1024 X 768 Active	$7175
COMP				
1120	100	6/610	10.4 / 640 X 480 Dual Scnn	$2457
1120T	100	8/610	10.4 / 640 X 480 Active	$3157
4110	100	8/610	11.3 / 600 X 600 Dual Scnn	$3049
4110D	100	8/810 CD	11.3 / 800 X 600 Dual Scnn	$3267
4120	120	16/1.08	11.3 / 800 X 600 Dual Scnn	$3267
4120T	120	16/1.06	11.6 / 600 X 600 Active	$4096
4130T	133	16/1.06	11.8 / 800 X 600 Active	$4867

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TCP Dec

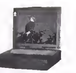
Desktop replacement notebooks

*Continued from page **44***

learn that it was in fact a DSVD (digital simultaneous voice over data) modem. In case you're wondering, that means you can be online with someone who also has a DSVD modem while talking to them at the same time over the same phone line. It also features a full-duplex speakerphone, digital answering machine and remote message retrieval. If you want a true desktop replacement notebook, this is it. But all that power doesn't come cheap. The 760ED sells for $8,991.

Impulse Duonote

Want it all without completely blowing your budget? Take a look at this new Duonote from Impulse Computer Corporation. Whether you want a large 2.1 GB hard drive or a built-in 28.8Kbps faxmodem, this Duonote has it all. How about built-in, 10BaseT networking capabilities? Not a problem. And the main unit itself weighs a mere 2.1 kg (4.7 lbs). If it sounds like we love this notebook, it's because we do. This unit is probably the closest thing you'll get to a true desktop replacement with all the bells and whistles to go along with it. Driven by a Pentium 133 MHz processor, 256K of Level-2 cache and 16 MB of RAM, this machine wasted no time soaring through our grueling benchmark suite. The main unit can be docked on a MultiNet Mobile Station, which houses a built-in 6x CD-ROM drive, a



removable floppy drive, the 10BaseT connection, and a port replicator consisting of an external monitor port, serial and parallel ports, a MIDI/game port, and dual retractable stereo speakers. The Mobile Station itself weighs only 900 g (2 lbs) and is less than 2.5 cm (1 in.) thick. The video system consists of an 11.3-inch TFT screen capable of 800x600 resolution with 1 MB of video RAM. A very complete package, with a very competitive price of $5,495 and a three-year warranty. (Having to part with this little gem is one of the hardest things I've ever had to do. Hmm, when's that next notebook survey scheduled?—SH)

KTX 880-100 and 880-133

New contenders in our Test Labs, KTX notebooks are distributed worldwide by Edge Wholesale Ltd. Both models we received were identical on the outside, with differences in processor speeds and screen types.

The two models were tested with 16 MB of RAM (expandable to 80 MB), 256K of level 2 cache, and 1.0 GB hard drives. The 100 MHz model features a 10.4-inch active matrix screen, whereas the 133 MHz version comes with a larger 12.1-inch version, also active matrix.

Both systems come standard with 6x removable CD-ROM drives and 16-bit audio capabilities. Both systems are priced competitively, with the 100 MHz model being $3,290, and the 133 MHz system at $4,590. The warranty is two years for parts and labor, and applies internationally, wherever Edge distributors are found.

*Continued on page **48***

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TOSHIBA NEC IBM COMPAQ AST Panasonic Acer digital

Desktop replacement notebooks

Continued from page **46**

NEC Versa 4230

We managed to squeeze this NEC 4230 in just before going to press For the most part it s very similar to its cousin the 6030H (reviewed below) with differences being in the form of smaller sized components

The processor is still 133 MHz but RAM is 8 MB as standard The screen is a 10 4 inch TFT capable of internal resolutions of 800x600 with 1 MB of video RAM The unit comes with a 1 0 GB hard drive and removable 6x CD ROM and floppy drives. Performance was slightly less than the 6030H which is anticipated due to the 8 MB of RAM The price on the 4230 is $5 129 with a one-year warranty

NEC Versa 6030H

One of NEC's latest is this 6030H Featuring a Pentium 133 MHz processor, this fine machine managed to come out on top in terms of raw performance on our benchmark suite Additional specs include 256K of Level 2 cache 16 MB of RAM expandable to 48 MB a 12 1 inch TFT display 2 MB of video RAM a 1 2 GB hard drive and 16-bit stereo sound The 6x CD ROM and floppy drives are interchangeable For your communication needs, the system has IR capabilities and a built-in 28 8Kbps faxmodem which leaves two PCMCIA slots free for other peripherals. All in all, the unit is fast, complete, and priced so it's not totally out of reach at $6,589 with a one-year warranty

Panasonic CF-25

Known around our Test Lab as "the road warrior" this latest creation from Panasonic gives new meaning to the term "heavy duty" At first glance, you d think you were looking at a piece of military hardware Designed to withstand some serious abuse the CF 25 is reportedly capable of sustaining a drop onto a concrete floor from 90 cm (3 ft) above ground. We say reportedly because we didn't have the nerve to try it, however tempting it may have been. The unit features a strong magnesium alloy outer shell with impact dampening gels placed inside the machine to protect the vital components that would normally not be able to take any abuse especially your precious hard drive

The LCD screen is protected by a rubber ring seal as well as the previously mentioned gel Because of its design the CF-25 is resistant to dust and water making outdoor computing all the more appealing. Upon close inspection we ve verified what Panasonic claims with regards to having sealed all major points of entry for dust and water. These include the keyboard, the LCD display and all ports As far as the inside of the machine is concerned, it features a Pentium 133 MHz processor 8 MB of RAM (expandable to 72 MB) a 1 3 GB hard drive and three PCMCIA slots. The screen is a 10 4-inch active matrix TFT capable of resolutions up to 800x600 This was another unit that unfortunately arrived late (once again due to popular demand) and therefore has no scores listed on our charts According to Panasonic the unit with the above configuration is available immediately for just under $6 000.

Continued on page **50**

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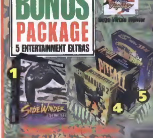

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Desktop replacement notebooks

Continued from page **48**

Toshiba Tecra 500CDT

Notebooks seem to be very popular items these days, making demo units hard to come by. This was the case when we requested a Toshiba model. As notebooks become more and more powerful, the demand by journalists for demo units grows. We were unable to obtain a 133 MHz model, so we went with the 500 CDT which features a 120 MHz CPU. The system has 256K of pipeline burst cache, 16 MB of RAM expandable to 144 MB, and a 1.2 GB hard drive. The multimedia components in the unit include built-in 16-bit stereo sound and a removable 6x CD-ROM drive. The floppy drive and CD ROM drive are interchangeable. The screen is a 12.1 inch active matrix with resolutions up to 800x600, using 2 MB of video RAM. Also included in the unit are IR communications capabilities and a built-in 28.8Kbps faxmodem. Performance was above average, considering that the processor was 120 MHz. This model is available as described above for $6,299 with a three-year warranty.

COMPUTER PAPER Editor's CHOICE

Performance
The award for best overall performance goes to our fastest system in the survey, the NEC Versa 6030H. Priced to be a viable option, this model is complete, making it a good solution for business computing.

Price/Performance
The most bang for the buck definitely goes to Impulse. The Duonote we tested was everything we were looking for in this survey on desktop replacement notebooks. It has all the features you could ask for at a price that makes it attainable.

Overall Value
The lowest priced notebook in our survey came from Dell. Its model LM P133 is a good performer, feature-rich, and priced for home or business. ❑

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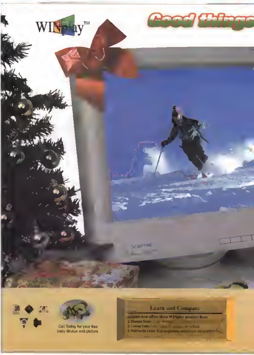
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BY EMRU TOWNSEND

The word "ergonomic" is mysterious to most people. We see it on all sorts of computer products, but few people think it means more than odd looking curves on a keyboard or funny looking humps on a mouse.

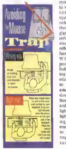
Simply put, ergonomics is the science or practice of modifying your environment so that you can interact with it in a safe and healthy manner. From personal observation many home and office computer users put little thought into their work habits or how their workspace is organized. This can lead to complaints about headaches, neck pain, back pain, fatigue, tired eyes, sore wrists, sore elbows, or sore shoulders, which can in turn lead to decreased productivity and a less enjoyable computing experience. In the worst cases, it can mean repetitive strain injuries (RSI), or back problems.

What follows is a guide to creating an "ergonomically correct" work area, based both on research and personal experience. Some of these solutions require nothing more than a little forethought. If you are in the process of shopping for a new computer or are just setting one up, you should use this guide to influence your buying decisions. If you already have a computer, you should take a hard look at your existing setup and consider what needs improvement or replacement. While some of the solutions listed here can be expensive, they're definitely worth it in the long run.

Be prepared!

Many home computer owners find themselves shoehorning their computer somewhere in the established order (or chaos) of their homes. It ends up squeezed into a corner, on the kitchen table, in the basement or in someone's bedroom. In many of these cases, some space is cleared, the computer is plunked down, and little more is thought of it. What's needed in these cases is a little less rearranging and a bit more prearranging.

One of the first considerations in placing a computer is lighting. You're going to be focusing on one spot, the computer's screen, for extended periods of time; your workspace should not be too dark, as the monitor's brightness will eventually overwhelm you. By the same token, if the area is too bright, your eyes will start to water from constantly squinting in order to see through the glare. Try to reduce the amount of reflective surfaces nearby. Whenever possible, soft, indirect lighting is best, otherwise, try to limit the amount of direct glare from lamps and overhead lights. Natural light is soothing, and saves energy but try to avoid getting direct sunlight ➤



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The next phase is the work area itself. In general, you want to make sure your desk and chair are going to meet two criteria: they need to be comfortably arranged, since you'll be sitting there for extended periods of time, and everything on, in, or around the desk needs to be reasonably accessible.

Your first concern is making sure you're able to sit comfortably and safely. Your chair should have some sort of lower back support, and older chairs with four wheels should be avoided—a yawn and stretch at the end of a long day in such a chair can easily lead to its tilting backwards and falling over.

You want to sit in such a way that your hands and arms are in a "neutral" position that is, your forearms should be parallel to the desk's surface, and your hands should not have to tilt up or down to reach the keyboard. Your feet should also be able to comfortably rest on the floor or, preferably, on a footrest.

Choosing the right chair and desk combination can be tricky, since it depends on how your body is put together. Sometimes finding just the right combination can require many trips to different furniture or office supply stores, armed with measuring tape and a notepad.

Four easy pieces

Now we can worry about the computer itself, which can be broken down into four main segments: the monitor, the computer enclosure that holds the central processing unit (CPU) and power supply, the keyboard and the mouse.

The monitor should have two crucial components: some provision for reducing glare, and a built-in tilt/swivel stand. It should also be elevated in such a way that you can look straight ahead and see the top half of the screen. (If you can afford it, get a monitor that's at least 15 inches in size: while it's a bit more expensive than a 14-inch monitor, it can be much easier on the eyes.)

The CPU enclosure should be placed somewhere within easy reach. People who own mini or medium tower computers have a tendency to put them on the floor, freeing up valuable desktop space. Unfortunately, this leads to some pretty interesting contortions when you're trying to reach for the power switch, disk drive, or CD-ROM drive. This is a minor nuisance at best, but when you have to install a program that comes on 10 floppies you might begin to feel aches after the fourth or fifth time you have to lean over to switch diskettes. IBM had the right idea when it designed the new Aptiva model, which separates the drive bays from the CPU.

I generally recommend split keyboards like the Microsoft Natural Keyboard, since they're designed to alleviate stress on the wrists by allowing you to position your hands more naturally, and have built in wrist rests. But keep in mind that some people dislike this style of keyboard, so the best advice here is try before you buy. A decent wrist rest—a padded support that runs the length of the keyboard—is highly recommended.

Virtually all home PCs now come with Windows, which means you'll also need a mouse (and of course, you'll need a mouse with a Macintosh). Like keyboards, mouse preferences are subjective, so try before you buy. When you consider how much mileage your average mouse gets in the space of a day

Continued on page **54**

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- Does your screen tilt?
- Is the distance between your eyes and the screen between 30-77 cm (13-30 in.)? Most people find a viewing distance of 50 cm (20 in.) comfortable.
- Does the angle of the keyboard allow you to work with your wrists straight?
- Are your mouse (or other input holder) and keyboard on the same level?
- Are your mouse (or other input device) and keyboard close to one another?
- Can you reach input devices comfortably without stretching or reaching?
- Do you know how to adjust your monitor, keyboard support, and work surfaces?
- Is your document holder at the same height and viewing the same distance as your monitor so that you move your head very little when you look from document to screen?
- While you are editing on screen, is the monitor directly in front of you?
- When you are inputting data, are your source documents placed in a document holder directly in front of you?
- Is your document holder able to hold binders, books, computer paper, or other documents that you work with?
- Are the items you use frequently within easy reach, i.e. 40 cm (16 in.)?
- Are the items you use occasionally within arm's reach, i.e. 30-50 cm (12-20 in.)?
- Can you maintain a comfortable, upright head posture when using the phone?
- Are the items you seldom use stored more than 50 cm (20 inch) from you or off the desk surface?
- Are large reference materials located near waist level?
- Do you have enough space beneath your work surface to move your legs?

Source: *How to Make Your Computer Workstation Fit You*, reprinted with permission of the Workers' Compensation Board of B.C.

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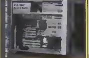

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Comfortable workspace

Continued from page ***52***

you quickly realize how much wear and tear your arm wrist, and fingers are experiencing.

Many neck, shoulder arm and wrist pains can be attributed to poor mouse placement. You shouldn't have to reach for it every time you need to use it. Mice should be on about the same level as the keyboard. There should also be ample space for the mouse; too many people still squeeze it in between the keyboard and something else, resulting in unnatural arm motions or a juggling act between the keyboard and the mouse. If desk space is really at a premium, consider an attachment for the side of your desk or chair where the mouse can rest.

A variation of the mouse is the trackball, which some people prefer to a mouse. You might also consider alternate pointing devices, such as graphics tablets or touch pads These have the advantage of being immobile and many people find them easier on the wrists than a mouse Also if you're already suffering from an RSI these gadgets can be a godsend—but you might want to check with your physician first.

Peripheral visions

Peripherals come in many shapes and sizes but the general rule can be summed up in one word accessibility Your peripherals should be within easy reach, so that you can get to power switches, eject buttons, and the like without having to stretch or twist. However, as more and more peripherals compete for limited desk space, this is not always possible. When you're forced to move something a bit farther out of the way a good rule of thumb is to keep the most frequently used peripherals closest to you. The mouse should be right next to you something like an external modem, which is generally turned on and off once per computing session, can be placed further away

Always leave room for your printer and a document holder. Your document holder should sit alongside your monitor, so that you don't have to repeatedly tilt or swivel your head to switch your gaze from the monitor to the holder and back. If you have no room on the desk to the side of your monitor, get a document holder that attaches directly to the monitor.

Your printer should have space clear to easily feed paper read the display panel and remove paper from the tray If you don t have a printer now, plan ahead it's very likely you'll get one in the future

The Zen of safe computing

Because we're all built differently it can be a nightmare setting up a single workspace for multiple users—a common situation with most home computers There are desks and chairs available that allow users to customize just about every conceivable angle and elevation, it may be a worthwhile investment for a work area that will be used by three or more people It's hard to come up with the ergonomic system that's ideal for all members of the family but it's a goal worth aiming for

If there is one universal rule to follow, it's that the safest computing is to occasionally not compute. No project is so important that time cannot be taken to eat properly stretch, massage your wrists, or simply take a quick stroll around the house or office If you spend all day in front of a computer at home or at work, include a 15-minute walk or bicycle ride in your lunch break. In general, regular rest breaks—even as short as five minutes—help to ease physical tension and relax potentially overworked muscles.

Work smarter, not harder

These guidelines address the most common ergonomic problems in computing environments, but they're not complete, and they're not universal. Nor is it easy to get everything right the first time (Every three months, I do a review of my work area to see what needs improving. I've completely rearranged everything at least three times in the past two years.)

For a more in-depth perspective on ergonomics a good resource is Cornell University's Web site (see contacts) It's regularly updated and provides the texts of several studies in the field

Achieving the perfect computer environment is hard work but bear in mind that it's your physical and mental well-being at stake, as well as that of your family, co-workers, or employees. Safe computing is happy computing. ❏

Contacts: Cornell University ergonomics, Web site.
http://www.ergo.human.cornell.edu

Emru Townsend (emru@cam.org) is still in search of the perfect desk

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Your first peripherals

Separating the toys from the tools

BY ROD LAMIRAND

After you bring your first computer home and play with it—excuse me, I should say, worked with it—for a few months, you discover that there is a world of things you could do if you only had a scanner, or a fancy printer. You are perfectly happy with your machine but if you only had a business-card reader, or a joystick, or that neat little optical character recognition (OCR) pen. Well, my friend, you are thinking about peripherals.

You are thinking about what you need, what you could use, and what you want. As a long time-computer lover—and I say this with a tinge of embarrassment—I have been bitten by the every little gadget bug. And after all the fun and bother of getting the thing home, it is sometimes the case that you bought yourself an expensive toy, not a useful tool. Read on and I will dispense a little advice purchased over the years through sad experience.

A birthday to remember

I went out for breakfast with my wife on my birthday and she gave me a card, which contained money from her and both our families. Rather than give small presents that day I was to take the money and buy whatever computer thingy I wanted. By "thingy" my beautiful betrothed meant peripheral and the envelope contained $300. Talk about technophile heaven—breakfast lay forgotten as we sped off.

In the end, I brought home a hand scanner which, at that time, cost $325. It sits here now. I never use it. It will scan a small image but only in 256 grayscale or black and white. I have used it for OCR, but how often does one find something that is only 10.5 cm (four inches) wide or less that needs to be converted to text, and that is too long to type? I'll tell you how often—once in three years.

There is the ability to auto-stitch two scans together but it works poorly at best. Now, there is nothing wrong with the product and for someone with a laptop who needs to capture clipart on the go, it would be perfect, but it was bad way to spend $300. (I have never admitted this to my wife or family and if they read this I will add that it was one of the best birthdays I ever had.) I've told this sad tale to make an important point. It takes a lot of thought to understand the difference between something we want and something we will use.

The useful and the alluring

And so, what things are useful out there? I would recommend that if you don't have a modem, a CD-ROM drive or a printer, that is where you should start. As for the type of modem, CD-ROM drive or printer, that is another article, but suffice to say my personal preferences run toward US Robotics for the modem (the faster the better), a 4x or faster CD-ROM drive, and a color inkjet from Epson, Hewlett Packard or Canon (and don't buy their entry-level machines—do your research: four colors not three).

But after those essentials, which probably came with your computer, what then? Well, of course it is a matter of preference, but I would go with a sheet fed personal scanner. These babies are hot. They are small, one sheet at a time, scanners. When you stick a piece of paper in, they grab it and the software comes up on your screen to ask if you

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want to copy it, scan a picture, scan text and OCR it, or scan and file it away for later use.

Some, like the Logitech PageScan Color, have color and are great for scanning personal photographs into your computer to make Christmas or business cards. There are a number of these devices, such as the Visioneer PaperPort, and they have various features but their main function is to let you get the paper off your desk and out of the filing cabinet. If you use your computer as a tool to work, process and fax, and organize, then a small sheet-fed scanner would be a good choice. They run from $400 to $600.

If you are a gamer, or have kids around, then a joystick can be a good choice. There are dozens of them on the market. It is probably best if you get one made by a big player such as Gravis or CH Products. You can buy little joysticks and big joysticks; they have large game panels and foot pedals for car racing and/or plane flying. You can buy a steering wheel if you are serious enough about your games. There are even body vests which thump your back and side to the beat of the action, if you are so inclined. This category can even go more esoteric, with 3D headsets and 3D mice.

I have assumed above that your first computer has a sound card—most do. If for some reason you do not have one, get one. There are many different cards for many different budgets, and in this area, you get what you pay for. I have long been a SoundBlaster customer and the products have been good to me, so I don't mind recommending these cards.

A few things about sound cards. If you are relatively new to the computer, have the store install it. PnP (Plug and Play) is like a United Nations resolution—they work great when everyone follows them.

Secondly, don't buy those little tiny, tinny, speakers that go beside your monitor—they are terrible. Either buy bigger, better computer speakers (they have a built-in power supply) or simply run the output from the sound card into a small amp or receiver with a built-in amp and out to regular stereo speakers. You probably have an old pair in the garage and if you hide them under the desk or behind a curtain they work great. Just remember that you must have a way to amplify the signal because the little card in your computer can't power your big, old stereo speakers.

Video, the coming thing

A whole range of peripheral products are geared toward video buffs. This is an area that you should initially stay away from, unless you have purchased your computer with this intention. There are video capture boards that will let you take the output of your VCR or camcorder and translate it into a digital format so that you can then do special effects and very accurate editing. However, you need the right software and just the right card as well as a good SuperVHS VCR.

One inexpensive product (around $300) called Snappy will take a snapshot of a video and give you a color still picture. Useful perhaps to the police, but hard to justify for your home machine—unless you have kilometres of family videos, in which case you can grab still shots with the Snappy and use them in your personal greeting cards in the same way that you'd use scanned snapshots.

What about backup systems?

A consideration for your first peripheral might be a storage device of some sort. This is a tough area to recommend because there are so many offerings. You can buy a tape backup system, a Zip system, a portable hard-drive, a WORM CD ROM drive, and many more.

If you have reams of data to secure, then go to our Web page (http://www.tcp.ca) and search back issues for any one of our storage features.

Summing up

And that is about it. There are small OCR machines that are made solely for reading business cards. You drop in a few cards and the machine attempts to read them. They work to a degree but are confused by some fancy business cards. Besides, a sheet-fed scanner will do the same job and many others.

There is a little pen that can scan and OCR text one line at a time. The ads suggest that we might all benefit from being able to grab a sentence or two out of the encyclopedia. Perhaps.

As you may have guessed, there are all sorts of other things you can hook up to your computer and there will continue to be others. I haven't even mentioned graphics tablets, plotters or the computer-assisted sewing machines.

The best advice I can give to a new user is to think long and hard about the device. If you have a hard time explaining to someone why you are going to get a particular piece of hardware, you probably won't use it. ❑

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First software for your home office

Knowing what you need before you buy

BY GEOF WHEELWSIGHT

When you think about buying software for your home office or small business, you should probably start with the simplest and oldest technology you can find. a pencil and a piece of paper.

Begin by listing all the activities you are likely to be undertaking in the office—and try to be as comprehensive as you can about it Even if you think of something that you couldn't possibly imagine would have any relevance to the use of computers, put it on the list anyway as you may find out differently The strategy is that you will then take this activities list and map it against the capabilities of the personal computer system and software (as well as add-on extras and services) that you can afford

This process is know as "activities-based planning" and is designed to let you understand exactly what it is that you really want to accomplish before you set about the tricky task of enlisting a personal computer and some software to help realize the accomplishment.

To get some idea of how this might work, it's worth taking a look at an example Let's say, for instance, that after a number of years of working for a house inspection agency you decide to go it alone and start your own home inspection business

In order to run this new business, you'll need some basics a phone number a fax (to send off urgent reports to clients), a way of professionally generating reports for your clients a good record-keeping system to file all previous house reports a reliable way to keep accounts and some method for invoicing and planning cash flow

These are all very basic requirements and would be common to dozens of businesses that you might consider running from your home Here's how you might go about using personal computer technology to meet the needs of this small business

Start with the simple matter of how you want to store the names addresses and other business details of your customers suppliers and other vital contacts

One of the strongest candidates for this might be a "contact management" application (such as Maximizer Goldmine or Symantec ACT!) which not only lets you enter all the basic information about contacts that you would typically expect, but helps you in building detailed contact records

Such records will allow you, for example, to tell a customer—while you are on a phone call with them—that it has been five years since their last home inspection and that it might be time for another. You might also have links within the contact manager to word-processed copies of the report resulting from the previous inspection the invoice records in your accounting system and even digitally stored pictures of the customer's home

For doing business correspondence and day to-day reports you will almost certainly want to use word-processing software Many quite acceptable packages are available, but you may find that it makes sense to buy this as part of a "software suite" that would also typically include presentation graphics software a spreadsheet for doing financial planning and statistical analysis and a database for keeping detailed records of all kinds. There are excellent examples of such applications currently available from Microsoft, Corel and the Lotus Development division of IBM

To round out this selection of basic software, you should consider some form of specialist bookkeeping application Among the popular choices are Computer Associates' ACCPAC and the recently revised Intuit QuickBooks and M Y O B. (Mind Your Own Business) from BestWare The size of your business will have a lot to do with your choice—and most small operations will probably find that something like QuickBooks or M Y O B should more than adequately meet their needs

In the modern business environment, the issue of electronic communication can also not be ignored For a lot of small businesses, one good option is electronic mail (e-mail) via an Internet service provider (ISP) There are lots of good ISPs around (including national services such as Sympatico IBM Advantis and ISTAR as well as access from online service companies like CompuServe, America Online and Microsoft's MSN) who can set you up with e-mail

If, however you want to really move into the age of electronic commerce you'll want to consider having your own World Wide Web site as part of this effort. To do that, you'll have to make sure you choose an ISP that will provide you with the space to host your own Web pages from its site

Have a good time setting up your business and enjoy a prosperous New Year! ❑

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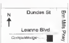

Your first monitor

BY DAVID TANAKA

If you're about to buy a computer you'll also have to consider a monitor While the CPU speed and RAM and hard drive capacity are all important the monitor is your window on your PC, and you need to remember that monitors are not of equal quality

If you buy one that's sub-par, the enjoyment you get and the productivity you experience with your fancy new computer will be undermined. The image may flicker causing your eyes to tire quickly—or you might experience headaches. Pictures may appear fuzzy or lines that are supposed to be straight will be distorted.

While computers are superseded by newer faster models every six months a monitor will last for years. Therefore, it will pay you to do some extra research—and perhaps budget a bit more money—on this component In two or three years, when you're ready to replace your aging Pentium you'll still be able to use your existing monitor if you made an informed choice today

Here are a few pointers to make sure you buy a monitor you can live with for many years

Radiation and emission standards

Virtually all monitors today conform the the MPR II emission standard The newer TCO 1992 is a Swedish standard that was developed in conjunction with workers unions in that country In order to meet this standard, monitors must be well shielded for electromagnetic (EM) and radio frequency (RF) emissions This is accomplished by including more metal shielding inside the monitor case or by spraying parts with metallic coating, which achieves the same end TCO 1992 is considered the strictest standard and monitors that meet it are a bit more expensive

Anti glare coatings

If you see a monitor advertised as having ARAG it means that the screen has some kind of anti-reflection (AR) and anti-glare (AG) coating Most monitors have this feature but be sure to check because like a TV set that has bad glare a monitor that reflects back the room lighting will annoy you to no end

EnergyStar compliant

This is a set of broad standards established in the United States to reduce the energy consumption of consumer products Monitors that bear this sticker must consume no more than 30 watts when in suspend mode Most monitors you buy today in Canada have passed the U.S. energy standard and bear the EnergyStar logo

Aperture Grill vs Shadow Mask

There are basically two designs that monitors fall into those that use the Sony Trinitron tube (either purchased from Sony or made from design specs licensed from Sony) and those that don t.

Trinitron-based monitors usually have some variation of "tron" in the name You can also tell its a Trinitron-based monitor if it lists the term "aperture grill" in the description This describes the method of separating and aligning the red blue and green phosphors that are used to compose the image on the screen Non Trinitron monitors will use the term "shadow mask" which is an alternate method of separating and aligning the phosphors on the screen.

Many people claim that Trinitron-based monitors are "the best," and there's no question that they are very good However, they tend to cost more. Moreover the state of shadow mask-based monitors has improved, and you can get excellent results with these too—and this is the most common type of monitor.

One monitor manufacturer, Viewsonic which makes both kinds, says Trinitron-based monitors are suitable for work that requires fine detail, like computer-aided design and drafting It says, generally speaking, aperture grill based monitors will be brighter and have richer colors, while shadow mask-based ones will look crisper

Dot Pitch

Dot pitch is a measure of the fineness of the image The most common design today is 0 28 mm or what's sometimes referred to as a "two-eight dot pitch" Trinitron monitors don't use "dots" but the comparable specification for these will be approximately 0 26 mm

Generally speaking, the lower the number the better If you come across a bargain monitor with a dot pitch of 0 38 you should pass it by

Refresh Rate

This refers to the number of times per second a monitor is able to redraw the screen You will want to make sure the monitor you choose has a refresh rate of at least 72 Hz at the resolution you want to use Most monitors will be able to support this at basic VGA (640x480 pixel resolution) but lower-quality ones will drop to lower refresh rates as you increase the screen resolution to SVGA (800x600 pixel resolution) or higher

At lower refresh rates and under some lighting conditions you will detect a flicker in the image that will drive you and your eyes to distraction over time

The second part of this equation is the video card (sometimes called the graphics card video-graphics card or graphics accelerator card) On the better quality ones you can adjust both the screen resolution and the refresh frequency—within the limitations of the monitor—to produce an image that is rock solid A quality monitor deserves a quality graphics card

Screen size

As a general rule you should try to get a 15 inch monitor or larger if you can afford it Many budget systems come with a 14-inch monitor, and you should try to upgrade to a good quality 15-incher if you're looking at one of these systems

Whether you need something bigger than 15 inches is a matter of personal taste need and desire but remember that a 17-inch

Continued on page 62

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Your first monitor

*Continued from page **59***

monitor is bigger and heavier than a 15-inch one, and a 20-incher is bigger still. If this computer is for your home or for an office with limited desk space keep in mind the adjustment you'll have to make with a bigger monitor That being said, I have a 17 inch monitor both at home and at work, and it's a real luxury to be able to work and play on a big screen.

Multimedia ready

Some monitors come with built-in speakers, a microphone and other input or output jacks. The advantage is that it helps eliminate some of the clutter that accumulates on your desk. The disadvantage is that sometimes, the quality of the built-in speakers is mediocre and not worth the extra you'll pay for the so-called multimedia monitor

However, we've heard some that sound pretty good certainly better than the tinny "multimedia speakers" that often come with computer systems So the best advice is listen before you buy

The eye test

Your own eyes are a pretty good judge of monitor quality If a model looks bad after five minutes of testing in a store imagine what it will be like after several hours at home Here are two quick test you can perform in the store

- **The ad hoc flicker test** Cast your gaze away from the monitor, but so that you can still see the screen with your peripheral vision. If you detect flicker or jumpiness in the screen with your peripheral vision, chances are good this monitor will bother you with continued use (If the store uses fluorescent lights, that may make things worse)
- **Corner action** Even cheap monitors will produce a good image in the centre portion of the screen It's what goes on in the corners and on the edges that separates the good from the not so good. Look for colors that don't quite converge Fill the screen with text and look for portions that go soft as though they're out of focus Also look for straight lines that bend inward or outward, and which can't be straightened with the monitor's controls, noticeable dimming or color shifts when compared to the centre, and other strange distortions ❑

For the voyeur • NB—To satisfy the voyeur in all of us, lots of Web cams have sprung up over the past couple of years. The idea is simple—connect a video camera to a Web page and let Internet users around the world see what the cameras are seeing The views range from famous places, such as the Empire State Building and Mount Fuji to major intersections, people's offices school labs and views from various windows The following are some of the best indices to Webcams we found.

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COMDEX

Color me Comdex

Past, present and future on display at Vegas tradeshow

BY JEFF EVANS AND DAVID TANAKA

COM•dex *n* an event that is huge and overwhelming yet mysteriously alluring *v.* to be overwhelmed with an unmediated flow of fact, confabulation, pontification and hyperbole that operates on all senses, as in *"I'm all comdexed out."*

Whew Well, that's Fall Comdex for another year Many people who go to the biggest Comdex of them all in Las Vegas complain about the crowds the endless lineups, traffic congestion and the obscenity of excess shown by the exhibitors in their quarter million dollar pavilions and extravagant hospitality suites

All that may be true, but if you want to get a idea of the shape of the things to come in the computer industry, this is the show to attend. As one might expect, the underlying technology that touched much of what went on at Fall Comdex was the Internet and Internet-related tools With more than 2 000 exhibitors in attendance It's difficult to provide a comprehensive report on all that was new What follows are the items that caught our attention during the four days we trolled the show floor and conference halls.

Keynote You ain't seen nothing yet, according to Intel's Grove

Designers peer through the layers of Intel's first microprocessor the 4004

In his keynote speech Andrew Grove sketched a picture of the future of computer processing technology in which he promised that what will happen in the next 15 years will dwarf the improvements in performance in the previous quarter century

"The revolution started 25 years ago with a small sliver of silicon known as the microprocessor, has had a phenomenal impact on changing the way people work communicate and obtain information I believe that we are only at the beginning of this revolution in progress and the best in personal computing is yet to come," he stated.

Groves went on to note that the first Intel microprocessor, the Intel 4004, had 2,300 transistors when introduced in 1971 and could process 60 000 instructions per second. The current Pentium Pro chip has 3 5 million, and can perform up to 400 million instructions per second (400 MIPS) Grove claimed that by 2011, a microprocessor with a billion transistors may exist, with the ability to process 100,000,000,000 instructions per second (100,000 MIPS) This would be 250 times faster than the fastest current Pentium Pro.

Groves claimed that imminent improvements in the microprocessor will allow PCs "to deliver lifelike real-world experiences."

Even old sells computer museum display

As part of the celebrations of the 25th anniversary of the microprocessor a temporary museum was erected in the parking lot next to the Las Vegas Convention Centre In it were more than 40 historic examples of computer technology

The museum presented its display in the form of "The Hacker's Garage," a cluttered tribute to the fledgling computer culture of the '70s that encouraged individuals and small companies to invent the technology that changed the world Examples of pivotal inventions included Computer Space, the first coin-operated video game created by Nolan Bushnell in 1971, the MITS Altair 8800 perhaps the first, "do-it-yourself" personal computer and the Apple 1 the first 200 of which were literally sold out of a garage by Steve Jobs and Steve Wozniak.

If it were not for some last minute "rescue archaeology" by devoted computer professionals, much of the physical record of computing would have been lost in the frantic rush to promote the "next big thing" In some cases, the last-known examples of key computer models were literally rescued from garbage dumps and delivered to Boston's Computer Museum whose willingness to loan key artifacts helped make the Comdex Museum possible It's astonishing to consider how quickly the state-of-the-art technology

Continued on page 66

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Color me Comdex

Continued from page 64

of only a few years ago dazzling and incredibly expensive in its day has come to look prehistoric

Contact Museum at Comdex
via Intel's Web site. www.intel.com

Microsoft launches Windows CE handheld computer platform

At a splashy launch on Nov 18 at the Cirque du Soleil theatre in the Caesar's Palace casino, Microsoft's chief executive officer and one of the world's richest men Bill Gates, launched the much awaited Microsoft CE operating system (OS)

Taking advantage of the presence of much of the world's computer press at Fall Comdex Gates outlined to a packed hall the strategy behind Windows CE. He claimed that the traditional market for handheld computing devices (such as the Hewlett Packard OmniGo, the Psion and the Apple Newton Message Pad) had been limited by the relatively low functionality, difficult connectivity and limited applications compatibility of these devices which made them less appealing to both enterprises and individual PC users Gates believes that the Windows CE solution which is to make handhelds easy to integrate into the Windows computing environment will help create a much larger installed base of handheld computing devices

The LGca is one of the many new handheld computers employing Windows CE.

Gates admitted some shortcomings in this first generation of CE devices Future improvements will include such innovations as higher resolution color screens, voice input, faster processors and more RAM However for now the Windows CE is a very impressive step towards making handheld computing a seamless extension of main stream PC technology a first step towards truly pervasive high-performance mobile computing

In a separate interview John McGill, Microsoft's man in charge of the Windows CE project told us that the handheld PC is aimed at a group of users called the locally mobile user Mobile professional was originally defined by research firm BIS Strategic Decisions as people who are away from their desk more than 20 percent of the time

"Being away from their desk more than 20 percent of the time then breaks down into different kinds of mobility patterns " said McGill "The top three percent are what I refer to jokingly as the plane-hopping globe-trotting kind of executive image you have when you hear mobile professional. But in reality the bulk of the people who are mobile professionals are more like you and me We leave our desks for greater than 20 percent of the time but often we're within the confines of our own corporate environment or certainly in the Metro area Given that, we're considered locally mobile That means we have a greater opportunity to come back and synchronize at our desk And that who this product is really very very focused on "

(See a separate review of the Cassiopeia which uses Windows CE, elsewhere in this issue —Ed)

Contact Microsoft
Web site http://www.microsoft.com

Color Zaurus—maybe by mid year

The PC Card-based CCD lens transforms the Zaurus into a digital camera

One of the interesting maybe technologies (available now in Japan and maybe here by mid 97) is Sharp's Color Zaurus, which is quite unlike the Zaurus models we re familiar with in Canada This one has no keyboard, although the Sharp representative wasn t sure if that would be an option for the North American market. It also uses a proprietary operating system which again, may be replaced for the North American market

One of the more interesting devices for the color Zaurus was a PC Card-based CCD lens, which plugs into the Zaurus' PC Card slot and turns it into a digital camera. During the demonstration, the Sharp representative took a picture, pasted the image into an e-mail message and then fired the message across the local area network (LAN) Sharp had set up to a portable computer a few inches away.

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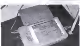

Sharp's Color Zaurus

The unit is about the size of a Newton, with a built-in Web browser and mail package a typical PIM suite, and weighing in at about 450 g (1 lb.) Its estimated price is $1,500

Apple focuses on internet, openness and innovation

The Newton MessagePad 200 with detachable keyboard

Apple Computer rolled out its latest technology and declared that the company's previous practice of ignoring technology not developed in house (the notorious NIH or "not invented here" syndrome) was officially dead From now on Apple representatives announced, Apple wouldn't hesitate to include the best of the world's technology in its hardware and software products

On the subject of the timetable for the release of Mac OS 8 codenamed Copland Apple was more coy Apparently Apple is still considering a wide range of options regarding its much-delayed new version of the OS an incremental partial release of Copland the incorporation of some third-party software or a longer delay An announcement of a final decision of what to do with OS 8 was promised for the next MacWorld show in early 1997

Some of the new Apple products on display included the very impressive new MessagePad 2000 the latest Newton model It boasts many improvements better handwriting recognition, a detachable keyboard, a new faster (up to 10 times) StrongARM central processing unit (CPU) more RAM bigger screen with 16 grey scales longer battery life and better connectivity options For the education market Apple announced the eMate 300, a lite notebook computer for the educational market Apple also showed its new PowerBook 1400 model which (finally) offers an internal CD ROM drive Apple also announced its ATM (asynchronous transfer mode) high-speed network technology and a new high-end LaserWriter 12/640 PS printer

Apple is far from out of the woods yet but under the company's new head Gilbert Amelio, the company is no longer losing money and if the pace of new product releases can be picked up It may once again return to the leading edge of the computer industry

Contact: Apple Tel 905 477 8700
Web site. http://www.apple.com

BeBox, a hot bop

PowerComputing chief executive officer Steve Kahng and Be president Jean Louis Gassee with one of the new PowerComputing Mac clones that will be shipped with the Be operating system

In the PowerPC pavilion, a number of hardware and software companies were trying to excite crowds with PowerPC hardware and software One product that caught our eye was the BeBox Dual603 from Be Inc of Menlo Park Calif The Be OS operating system running on a dual 133 MHz PowerPC 603-equipped was pretty impressive and a multi-panel video and sound demo showed its multi-threading strengths. ➤

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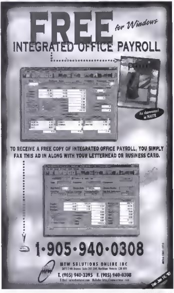

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[illegible]

The Be OS was also running on a fairly normal single-processor PowerMacintosh A spokesman said the Be OS would be available for the Mac early this year. In a separate announcement PowerComputing which makes PowerMac clones, said it will be shipping BeOS along with the MacOS with its new systems

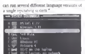
If you want a BeBox the dual processor model is available now and will set you back about US$3 000 Applications? With such a gorgeous interface who needs em (seriously porting of Mac applications is anticipated—Adobe is rumored to be preparing a BeOS version of Photoshop, for example).

Contact Be Inc. Tel 415-462-4100.
Web site. http://www be com

System Commander allows multiple O/Ses on a single PC

A new version of V Communications System Commander utility allows users to run multiple operating systems on a single PC Its makers claim that version 3 0 of the program permits the installation of up to 100 operating systems including Windows 95 Windows 3 1, Windows NT DOS, OS/2, SCO UNIX Solaris, Linux and any other Intel-compatible O/S

According to V Communications "System Commander takes the fear out of upgrading from Window 3 1 to Window 95 since users can maintain both until they are ready for a complete transition Gamers can run their favorite DOS games in their native environment, and then turn to Windows 95 to access the hottest 3D games on the market. Those who want to dabble in a UNIX platform can do so without investing in a separate system The utility is the only way users can run several different language versions of a single operating system."



System Commander allows use of more than one operating system on a single computer

System Commander prevents "rival" O/Ses from trying to wipe out each other's critical files by taking control of the user's PC before a new O/S is run. Once multiple O/Ses have been installed the user is shown a menu of O/S choices at startup and can simply select the desired operating system to load. V Communications claims that System Commander doesn't require partitioning of the hard drive System Commandeer sells for a street price of about $125

Contact V Communications Tel 800-648-8266
E-mail mike@v-com com
Web site http://www v-com com

Broderbund expands action game line with Last Express, Tone Rebellion

Broderbund is an entertainment software developer that has been widely known in recent years for producing some of the most charming and entertaining kids software on the market (such as the CD-ROM adaptation of Mercer Mayer's "Grandma and Me " one of the best selling children's CD ROMs ever)

At this year's Fall Comdex however Broderbund was promoting a group of well-produced action adventure titles aimed at an older market. The Last Express is a new "thrilling adventure game from Jordan Mechner developer of the award-winning Prince of Persia and Karateka." In the game, the player is Robert Cath an American travelling on the Orient Express from Paris to Istanbul in July 1914 The game takes place in a 3D space that recreates the interior of the train, and the player can move throughout the train and interact with the other digital characters in a very fluid and variable way

The Tone Rebellion created by the Logic Factory (Ascendancy) is a strategy game where the player is the leader of one of four groups of Floaters, inhabitants of a world of floating Islands. The player has to learn to cooperate with other Floater societies mine a resource called Tone, and avoid destruction by the Leviathan, the common enemy of all the Floaters. The game has a multi player/Internet feature that allows multiple users to play simultaneously on several PCs at once

Contact Broderbund
Web site http://www.broderbund.com
Last Express, Web site http://www lastexpress.com
Tone Rebellion Web site: http://www tonerebellion.com

Joysticks from Canada's Advanced Gravis rule Comdex

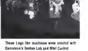
Burnaby B C-based Advanced Gravis Computer Technology added some fun and dynamism to Fall Comdex with its array of state of the art input devices for computer games and interactive multimedia software At a demonstration for *TCP* at the Silicon Northwest party/mini-tradeshow held during Fall Comdex representatives of the company showed off the latest in their line of joysticks and game pads.

Particularly impressive this year was the Gravis GrIP Game System "the first multi player, multi-button digital game system for the PC " The GrIP allows up to four players operate up to eight control buttons each The GrIP system comes with a multi-port game hub, and two GrIP-Pad controllers, with ports on the game hub for an additional two controllers Two versions of the system are available, one is bundled with a violent arcade-style fighting game and the other with a multi player hockey game

Also noteworthy was the Gravis GamePad Pro, a video console-style game pad for the PC with provision for two players via its Y cable, and programmable buttons for transferring keyboard game commands to the pad.

Contact Gravis Tel 604-431-5020
Web site http://www gravis.com

Lego set for the Digital Age



These Lego like machines were created with Comeleon's Techno Lab and Mbt Control

One product in the Canadian pavilion to watch for was shown by Longueuil ➤

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Que based Cameleon Informatique and Robotic Its products Techno Lab and Mini Control are educational tools but can also be used as a construction kit for creative minds in a home setting The hardware parts consist of snap-together building blocks motors, wheels etc and a wiring harness The software teaches basic programming and robotics. Techno Lab users design and prototype their own models on the computer, and then build them in real space

Contact: Cameleon Tel 514-651-6365

Color document management

Pagis Pro 97 from Xerox is a color document management system It allows you to scan color documents then index, fax or run them through optical character recognition (OCR) software According to Wayne Crandall vice president of software sales for Xerox s desktop document systems division Pagis Pro will convert scanned color documents into a variety of file formats including MS Word and also will create hypertext markup language (HTML) documents for the Web from the scan Crandall says Pagis saves scanned files in an XIF format (Tiff 6 extended) and will compress a 1 MB file down to about 240K The OCR engine inside Pagis Pro 97 is the highly regarded TextBridge Pro engine, also from Xerox.

Contact in Canada, Xerox Canada, 416-229-3769
Web site http://www.pagis.com

The emerging PC photography marketplace

We talked to Neil Snyder president of Colordesk Inc of San Jose Calif about a product called Colordesk Photo which consumers will likely see bundled with scanners, digital cameras color printers etc in the near future

Snyder says people who are taking pictures today are not interested in image editing in the same way professional graphic artists are They simply want their pictures to look good "People who buy Adobe Photoshop are motivated, experienced and do image editing for a living, or are hobbyists and are willing to learn the product " said Snyder.

"Our product is designed for people who take pictures and have no desire to do image editing. What [Photoshop] does manually we do automatically For example if you go into Adobe Photoshop you can adjust exposure brightness, contrast, shadow selective colors, hue gamma, intensity and saturation, all manually If you spend a couple of hours with the product, you can take a bad image and make it look good. We do all that for you—and that's our approach to the market."

Colordesk is a spinoff of Electronics For Imaging which developed the EFIcolor color management system used in professional printing environments. Colordesk uses an EFIcolor engine but the matching has been tweaked to accommodate consumer devices like digital cameras and inkjet printers Snyder said the company has agreements with Logitech Primax, Canon, NEC Argus Camera, along with some other pending deals he wasn t willing to disclose

Contact: ColorDesk Inc. Tel 408-479-6620

Universal aerial bus

*Continued on page **72***

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Many peripherals (mouse, keyboard, etc.) can be plugged into one USB hub

Universal serial bus (USB) was just a promise in 1995 but at Fall Comdex 96 a number of companies took part in the USB pavilion called BUS Stop. Products from Phoenix Technologies, Futuretech, Texas Instruments, Canon and Intel were all demonstrating their contributions to this new peripheral connection standard. Basically USB is a medium-speed port to which you can connect keyboard, mouse and other peripherals.

For example, Canon was demonstrating a hot Plug and Play USB connector on one of its Colorjet Inkjet printers but representatives would not say when such a product would be available.

Altec Lansing was demonstrating USB speaker systems, which the company claims is the first USB-enabled speaker system and Phoenix Technologies says its Phoenix Bios now supports USB. Some people in the USB area said USB would get a big push with the next version of Windows which apparently will have extensive USB driver support included when it ships in mid 1997.

Smaller forms of memory

A number of companies were showing CompactFlash cards, which are about the size of a book of matches or 3.64x4.28 cm (1.4x1.7 in.) and weigh about 11.5 g (.05 oz). These can be used alone with devices that have interfaces designed for them, or will drop into a PC Card carrier, which allows them to be accessed with a computer that has a PC Card slot.

Steve Larivee with SanDisk Corp of Maitland, Fla. said his comapny just announced a 64-megabit double-density flash RAM dies "which allows us to store 2 bits in each domain." He said the next products will use chips that are slightly larger than 64 megabits which will create a 10 MB card—"a nice round number." Sandisk will skip the 128 Mb generation and go right to 256 Mb. "That's going to allow us to do 30 MB in one die," said Larivee, who said the capacity of these CompactFlash cards should hit 100 MB by 1998.

Contact: Sandisk, Tel: 408-452-9500
Web site: http://www.sandisk.com

Digital authoring tools

Ephyx V-Active creates hypervideo

At the Panasonic booth was a company from Israel called Ephyx Technologies demonstrating a family of video authoring/editing tools under the V-Active brand. Underlying the basic V-Active technology is what the company calls HyperVideo which allows you to

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Real DVD applications and titles are a year away

BY PATRICK MCKENNA

LAS VEGAS (NB)—Comdex Fall 96 will be remembered for the debut of digital video disk (DVD) drives for computers but once the excitement is gone, where will users find software applications that take advantage of all this DVD hardware? Elektroson Inc., a well-known developer of CD recordable (CD-R) software, is planning to release the first DVD recordable software for pre-mastering applications in March, 1997.

Before DVD-ROM came along, CD-R was considered to be the next big technology to hit the desktop environment. For years CD-R has been too expensive, in excess of $1 000 and too complicated for most computer users. Developers on the other hand, had to have CD-R technology to create CD titles. Now, to create titles for the new DVD-ROM drives, developers need a software tool that allows them to create the master version of a new title.

From Comdex, Elektroson announced a partnership with Software Architects Inc. to create Top Gear, the first DVD-R software, according to the company. Development of the new product involves porting much of Elektroson's current CD-R technology into a DVD-R "solution."

Fortunately, DVD-ROM drives are backwards compatible, which means users can run existing CD ROM titles on a DVD drive. However users should not expect gigabytes of new DVD titles within the next 12 months.

"We expect to be the first company to produce a DVD-R software," said Elektroson general manager, Laura DeVere. "Since we do not expect to put Top Gear into developers' hands until March [of 1997], you can see that actually getting a full-blown DVD application to market is about a year away." DeVere also said one of the reasons demonstrations of DVD-ROM drives always involve an action packed feature film such as *Speed*, is that movies are the only real DVD product that is capable of taking advantage of DVD technology.

So what does this say about DVD-ROM replacing CD-ROM drives anytime soon? "There are more than 90 million CD-ROM drives in use around the world," said DeVere. "We are not going to see a market of that size go away overnight or anytime soon. As a matter of fact, we still plan to see CD-R drives shipped as part of a desktop computer for general use."

Martin Nellen, Elektroson's chief technology officer, told Newsbytes: "We think DVD is the future of optical storage but we also think CD-ROM technology is going to be with us for a long time. Our plan is to create products for both markets." ❑

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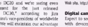

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Color me Comdex

Continued from page ***72***

define hot spots within a video stream and link them to other video streams or to sound pictures or uniform resource locator (URL) sites on the Internet

During the demonstration a company representative presented a travelogue-style interactive video clip, which you could navigate with a mouse If you hit a hot spot in the video—the roof of a cathedral was the example—the video cut to a video clip of the cathedral's interior.

The product is still in beta, and the company expects it will be ready for market by February, with an estimated price of US$695 Details for Canadian availability are unknown

Contact: Ephyx Technologies.
Web site. http://www.ephyx.com

miro, Fast ride digital video wave

Benefiting from a 40 percent increase in the digital video market in 1996 (according to IDC figures) the German video hardware company miro brought new PC video products to Comdex that caused great interest among attendees.

"miro's projected growth in video board shipments in 1996 will be about 233 percent, resulting in miro taking a 39 percent market share in the digital video board market," according to the independent IDC report *The Video and Image Capture Board Market, 1995-2000*

"We're not surprised by this phenomenal growth: we've witnessed incredible demand for the miro DC20 and we're seeing even greater interest for the just released miroVIDEO DC30," according to Jim Anderson, miro's vice-president of worldwide marketing "We will maintain our advantage by continuing to introduce more aggressive price points for hardware combined with new extremely easy-to-use editing software"

miro's line of digital editing systems for PCI-equipped Macs and PCs includes the entry-level DC10 unit, with a street price of about $499, and the DC20 unit for about $899 (both the DC10 and DC20 have been reviewed in *TCP* The new DC30 model, aimed for the professional market with a price of about $1 250 will reviewed in an upcoming issue)

miro chose to launch its new miroVIDEO DV100 (Firewire) solution for digital video editing at Comdex. The DV100 is compatible with Sony Digital Video (DV) source code and is compatible with products such as the Sony VX1000 Digital Handycam, and is software upgradable to future DV equipment

"The DV100 lets users keep video footage from a video camcorder in digital format through the entire production process, form shooting to storing to editing This allows—for the first time—the production of first generation quality video from a desktop video system First generation quality video is the highest quality video possible. With the miroVIDEO DV100 and control from the included miroVIDEO Story Tools video footage can be scanned scene locations auto-indexed, and then edited. Raw and unedited footage can simply be left on the camcorder's DV tape giving users a virtual storage peripheral in their digital camcorder" according to miro The company will sell the DV100 by itself, or bundled with the DC30 capture board for about $2,500

Fast Electronic, also headquartered in Germany held a media briefing to roll out its Master Line of digital video editing products. Fast chief executive officer Mattias Zahn, was at Comdex to announce the new line. A couple of Sony representatives were in the audience watching the Fast card pull in a pretty good video stream from a couple of new Sony digital video cameras connected to the computer with a single IEEE 1394 "firewire" connector.

Contact: miro Tel: 800-474-6476
Web site http://www.miro.com
Fast. Tel 415-296 3500
Web site. http://www.2FAST4U.com

Digital cameras and printers

Expect to see a lot of digital cameras, along with devices like image printers that will allow you to set up a digital processing lab in your home for about $1,500

Panasonic's TruePhoto and Fuji's Printit (which are the same device sold under two brand names) use a thermal process to develop the images (from digital cameras, scanned prints or captured video frames) onto special papers that have the heat sensitive chemicals in them The papers are made by Fuji and will

Continued on page ***76***

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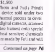

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ATI MACH64D 2MB $[illegible]
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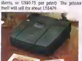
COMDEX

Color me Comdex

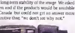
Continued from page 74

probably cost $1 per 7.6x12.7 cm (3x5 in.) sheet (The American representative said Fuji expected the cost to be about US$14.95 for 20 sheets, or US$0.75 per print) The printer itself will sell for about US$479.



Fuji's NC-2 digital/video printer

A Panasonic representative said one print was left out in the sun for about six weeks with no signs of fading, but that the product hadn't been around long enough to evaluate the long-term stability of the image. We asked when and if the products would be available in Canada but could not get an answer more definitive than "we don't see why not."



Epson's PhotoPC 500

Special thanks to Epson, which loaned us a couple of its latest PhotoPC 500 digital cameras to use during the show. Most of the snapshot images you see accompanying this report were taken with the units. Overall, we were very happy with the cameras. They were light and easy to carry around, and the picture quality, while still nowhere near 35mm film standards, was surprisingly good. Epson had set up a media photo area where we could go to download images from the camera and e-mail them back to our offices in Vancouver, and that worked flawlessly.

Agfa was demonstrating its Ephoto Model 307 digital camera, which comes with Adobe PhotoDeluxe image editing software.

It looked remarkably like an Epson PCPhoto500 with some cosmetic differences and when we asked if they were the same, the Agfa representative was a bit evasive. He did point out, however that the Agfa unit is the only consumer-level digital camera to come with a glass lens. Agfa had side-by side comparisons of pictures taken with its 307 and other digital cameras, and the image quality was at least as good. The estimated price on the Agfa is US$549.

Olympus Optical, which has a good reputation in the film camera market introduced two digital models. The D200L captures images at a resolution of 640x480 and has a suggested price of US$795. The model D300L will capture images of 1024x768 pixel resolutions, and has a suggested price of $1,195. The Olympus representative was demonstrating the D200L, whose images looked very good, with well-saturated colors and crisp details—at least when viewed on a computer monitor.

WHAT'S NEW

NCR Canada unveils advanced self service computer terminals for banking, electronic commerce

The Automated Banking Machine (ABM) has, along with video game consoles, been one of the key technologies for training the general public to interact with computer technology over the past quarter century. Canadians are perhaps the world's most enthusiastic users of ABM technology, with each of the major banks reporting hundreds of millions of ABM transactions annually in this country. NCR, one of the principal makers of ABMs worldwide, maintains ergonomics labs in Scotland and Atlanta which have spent decades studying human machine interaction and attempting to create user interfaces and machinery that is both idiot-and-vandal proof. In line with the general progress of computer technology and the drive by Canada's banks to add more highly automated profit making services, NCR has launched its latest generation of computerized ABM terminals, which will be manufactured in Canada.

The new NCR personaS product line is intended to integrate the latest advances in PC and networking technology with banks' and consumers' changing needs. When ABMs were first introduced in the 1970s, they cost more than $100 000 and were slow and unreliable. The new personaS systems which cost $22,000 to $29 000 (including a heavily armored casing to deter thieves) offers the first Pentium-based ABM units, featuring gigabyte hard drives and sophisticated graphics and video capabilities, infrared touch screens, and high speed connectivity options that range from satellite links, to digital fibre-optic networks to analog modems.

The new terminals are inherently modular and flexible in configuration, and can be customized with a variety of printer options (to allow for high-speed counterfeit-resistant concert ticket printing for example). Future options include audio or even videoconferencing capability to allow user interaction with a live salesperson.

NCR Canada intends to expand its manufacturing staff at its facility in Waterloo, Ont. to 120 people, from about 70, with corresponding employment increases among its mainly Canadian parts suppliers. At full capacity, the company expects to be manufacturing about 900 units per month (the Royal Bank, by way of example, has built up a network of about 4 700 ABMs across Canada over the past 20 years). Canadian-built ABMs will be installed across Canada, the United States and Mexico.

NCR representatives claimed that ongoing research into improved interface technology includes expanded use of videoconferencing and voice recognition, and increased use of home-based sales staff by the banks. In the future, it seems a computerized sales terminal will be a typical intermediary between the consumer and the vendors of an increasingly lengthy list of goods and services. ☐

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Web site http://www.ncr.com

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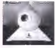

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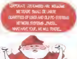

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A virtual visit to Comdex

BY GEOF WHEELWRIGHT

Our globe-trotting Mr Wheelwright was so travelled out by November that he decided to forego Comdex this year But with some useful tools of the trade—Web browser, telephone e-mail, fax and media releases—he managed to file this report without setting foot in Glitter City—Ed

To the casual observer, the recent Comdex/Fall 96 show in Las Vegas was all about the 25th anniversary of the microprocessor, the unveiling of the handheld computer based on Microsoft's new Windows CE operating system and the arrival of tons and tons of new products based on the Internet and intranets

But in amongst all these big announcements were a smattering of small, but nonetheless interesting, product unveilings from many companies, some which rarely hit the limelight To give you a different perspective on one of the largest computer industry annual trade shows here is a selection of those annoucements

A group of Comdex attendees test the Mylex PCI Raid controllers (top left) Samsung's exhibit includes a path of monitors (above right) *TCP* news editor David Tanaka tries out Rockwell's Trekker and his best Borg expression (left)

Getting on the Web phone

Software incompatibility has been a big problem for anyone who has wanted to use the Internet to hold voice conversations inexpensively via products like "WebPhone" Israeli Internet telephony pioneer VocalTec Ltd has joined with a number of other Internet telephony and communications companies to solve this problem. The solution lies in the founding of what is called the Voice Over IP (VoIP) Forum a cooperative coalition of Internet, telephony hardware, software and networking industry leaders whose formation is apparently intended to "create and drive rapid deployment of a set of standards for the compatibility of Internet telephony products"

In addition to Cisco Systems and VocalTec, which is taking credit for initiating the VoIP Forum, founding participants include a total of 40 initial members. They say they have joined forces based on their shared interest in accelerating the growth of telephony applications over the Internet, corporate intranets and bridging to the regular or public switched telephone network.

Contact: VocalTec Inc in New Jersey
Tel. 201 768-9400

The PC Inferno

Ever wondered how hot it gets inside a computer? Although it may seem silly this is an important issue as an overheated computer can cause the metal legs of some silicon chips to expand and climb out of their sockets—potentially damaging the computer and making it run improperly

A company called Quad-G Electronics in Mount Vernon, NY, released the CP-Vue line of personal computer "add-ons" designed to monitor and display the temperature within the computer case and central processing unit (CPU) These internal heat monitors claim to be able to warn users when their systems are approaching dangerously high heat levels, allowing them to save their files and power down before extensive heat damage occurs.

Contact: Quad-G, Tel: 914-988-7688

Towards a better notebook

Notebook computers could soon have displays that look even better than what you find on desktop computers. Canadian graphics chip specialist ATI Technologies has announced what it claims is the industry's first LCD graphics accelerator for notebook computers.

It apparently integrates high-performance 3D rendering, leading 2D performance, TV-quality video playback, and true color transmitters on a single chip—the ATI 3D RAGE LT—for the notebook manu-

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Free BSD is a high-performance, professional quality operating system for Intel-compatible PCs It is based on Berkley UNIX—the version of UNIX™ developed at the University of California at Berkley between 1975 and 1993—and derived from the final Berkley Software Distribution, 4.4BSD Lite. FreeBSD offers a combination of features unmatched by any other operating system:
- FreeBSD is a general purpose operating system, and is especially suited to networking applications.
- FreeBSD 2.1 also supplies a full complement of software development tools, over 300 additional software packages as well as XFree86, Version 3 1 2—the Intel-based version of the X Window System.
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facturers marketplace "ATI's 3D RAGE LT the first 3D chip for notebook computers in the world is a no-compromise LCD controller chip" says ATI vice-president Henry Quan "It results in a laptop system that can rival even outpace a desktop system In fact ATI reverses the usual two-year lag between desktop and notebook as the 3D RAGE LT has features some desktop systems do not"

Contact ATI Tel 905 882 2600

Where no lap has gone before...

Ever wanted a full-size keyboard to use with your notebook computer but couldn't afford the space? Darwin Keyboards in San Francisco says it has the answer. It's called the NoteBoard and claims to be the first full-sized keyboard designed specifically for use with notebook computers

The NoteBoard stands over a notebook's keyboard and provides the functionality of a full sized keyboard and features four special adjustable feet that allow users to position the keyboard directly over the notebook's keyboard. These feet adjust to six heights to accommodate notebooks of any thickness The NoteBoard also features a built-in wrist rest

Darwin Keyboards says the NoteBoard is designed for people who use their notebooks in stationary environments. When paired with a high-quality notebook screen It claims the NoteBoard provides an inexpensive alternative to a docking station It has full-sized keys rather than the smaller Enter Shift, Backspace Control and other smaller keys of notebook keyboards—and offers a dedicated numeric keypad. The NoteBoard is available in the standard version for $79 95 and NoteBoard Plus version that includes a mouse for $99 95 The NoteBoard is expected to ship sometime this month

Contact Darwin Keyboards Tel 415-922-5519

Ready for video ready modems?

Video conferencing specialist PictureTel Corporation of Andover MA announced at Comdex the availability of its PictureTel LivePhone analog videoconferencing technology for the newest video-ready modems manufactured by Lucent and Rockwell

LivePhone is PictureTel's new standards-based software-only product that promises to "turn any multimedia personal computer into a video phone that operates over traditional analog telephone lines that are in every business and home PictureTel says this new technology which is based on the International Telecommunications Unions H 324 standard for videoconferencing over analog telephone lines, is targeted to the small business and consumer markets, where videoconferencing systems that operate over digital telephone lines are not widely used"

LivePhone will apparently run on any multimedia PC running the Windows 95 operating system with a 100 MHz or faster Pentium chip David Andonian, vice-president of PictureTel's Personal Systems Division says that PictureTel's alliance with the Industry's two leading modem chipset technology developers is a win for the customers of all three companies

"Videoconferencing technology that operates over regular telephone lines will open up whole new markets for PictureTel Lucent and Rockwell" he says. "This marketing relationship enables three industry leaders to introduce the benefits of visual communications to businesses and consumers who have not previously deployed ISDN-based solutions but who will embrace this standards-based analog software product"

Contact PictureTel Tel 508-292 5000

DEC jumps on NLX definition

Digital Equipment Corporation made clear at Comdex that despite its ongoing offering of Alpha based systems, it was supporting a new generation of desktop systems design that incorporates design features announced recently by Intel.

The company said that move was "in keeping with Digital's commitment to provide customers with leading design technology" and cost-effective enterprise solutions

We are very pleased to be a driving contributor in Intel's NLX definition" suggested Howard Elias Digital's vice-president of worldwide business segments in the company's personal computer business unit "Many of the customer benefits of the new specification—including easy access to the motherboard disk, and other major system components—are shipping in our desktop products today"

Intel recently announced its new motherboard form factor NLX that is supposed to extend ease of serviceability and upgradability to an Industry standard desktop design. "Digital was valuable in helping Intel drive the new NLX specification," admitted Steve Werner general manager, Intel's original equipment manufacturer (OEM) products and services division ➤

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Digital says this new enclosure design first released in the Venturis value line earlier this year, is now available across all Digital desktops—from the value line to the enterprise-ready Celebris systems to the recently introduced Personal Workstation line. In addition to the low profile version, Digital extends the technology to short tower/desk side configurations.

Contact: Digital Equipment of Canada
Tel 416-730-7000

Videoconference from your lap

What do you get when you cross a camcorder with a notebook PC? Toshiba thought it would try and come up with an answer. The result was unveiled at Comdex in what Toshiba claims is the industry's smallest, lightest notebook PC camera.

The introduction is aimed at the OEM notebook computing market, towards notebook manufacturers requiring a state-of-the-art camera that enables videoconferencing and video-capture applications. Unlike conventional PC cameras Toshiba says the IK-D30 camera used in the notebook was engineered "from the ground" up specifically to meet the demands of notebook computing.

Features include a lightweight (170 g, or six ounces) and compact (5x7.6 cm, or 2x3 inches) design as well as a high bandwidth 32-bit CardBus interface that claims to deliver digital video directly to the system bus faster, more efficiently and "with higher picture quality" than cameras using standard NTSC or parallel port connections. Power consumption is less than one watt.

"As mobile computing technology continues to evolve, notebook manufacturers are confronted with the need for advanced video solutions to attract new buyers," suggests Doug Freck, vice-president and general manager of Toshiba Imaging Systems (a division of Toshiba America Information Systems, Inc).

"The IK D30 camera ideally meets that need, enabling notebook manufacturers to offer a computer that can videoconference over plain old telephone lines or the Internet... add pictures and video clips to presentations or documents ... or put live images on a Web site."

The IK D30 apparently yields true 640x480 image capture. Moreover by basing the IK D30 on a 330 000-pixel .8 mm (1/3 in.) color charged-coupled device (CCD) image sensor, Toshiba says the capture is extremely precise, resulting in better image display.

The new camera can stand freely on any flat surface, or be clipped directly on the notebook's LCD panel. This clip-on design is supposed to let the camera be pointed towards the user for videoconferencing or be aimed away for video recording or capture. Samples of the camera were expected to be available in December with volume production beginning in the first quarter of this year. Sample pricing is US$500.

Contact: Toshiba of Canada Ltd. Tel: 905-470-3478.

Motorola offers Web surfing by word of mouth

Motorola's Information Systems Group (ISG) showed off its new SM34DFV V.34 data/fax/voice host-based modem at Comdex with a demonstration that let users surf the Web using verbal commands to a Pentium system configured with the SM34DFV and loaded with speech recognition software from Lexicus, another Motorola division.

By speaking into the system, visitors could initiate a connection to an Internet service provider and navigate the Web to various sites, including some using software that supports audio streaming over the link. "The SM34DFV is a powerful software communications solution that addresses issues of cost, quality and upgradability for computer manufacturers," claimed Richard Leslie, vice-president of Motorola's ISG. "These demonstrations show how well this advanced technology works with mainstream consumer applications." ❑

Contact: Motorola, Tel 874-576-5000.

Java information source • NB—N-Ary, which is producing a book about Java that will be published in spring 1997, has a great Web page related to Java. Support sections include an interactive learning centre where users can learn about the language and a selection of articles. If you have any questions you might be able to find answers in the Q&A section and further reading is available from a selection of Web links to some of the best sources online.

Contact: N-Ary Web site: http://www.n-ary.com/

The music business • NB—J.A.M. is a bimonthly publication that has been educating both the aspiring and professional performing artist, producer, songwriter and musician about the business side of the recording industry since 1989. Online you can find extracts from the current magazine and resources such as the Info Packets, the most requested information on important topics.

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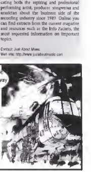
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IBM demos data transmission through human body

BY GRANT BUCKLER

LAS VEGAS (NB)—Forget optical fiber, twisted pair, coaxial cable, and even infrared. IBM researchers have come up with a new data transmission medium, and it's us.

People that is. Researchers from IBM's Almaden research facility showed groups of reporters at the Comdex/Fall trade show devices that can send and receive data through the human body at speeds of about 2.4Kbps

IBM demonstrated the technology by using it to read data from an electronic card on one individual's person when he shook hands with another individual. The second person was holding a receiver that picked up the text data transmitted by the card

The business-card trick was a handy demo—and also Newsbytes notes the follow-through on a throwaway remark made by IBM chairman Louis Gerstner when he delivered a keynote address at Comdex last fall and referred to business-card information some day being transmitted through a handshake—but what IBM calls Personal Area Network technology has other and possibly more useful applications

Tom Zimmerman of the Almaden research centre told Newsbytes that the device might be used to activate an automatic banking machine It would be more convenient and more secure than today's magnetic stripe cards, he said because the holder would not have to remove it from his or her pocket Besides the convenience this would avoid giving away the location of the person's wallet to bystanders and eliminate the risk of leaving it behind he said.

Access control would be another possible use, again meaning the transmitter—built into a plastic card almost indistinguishable from a credit card—could do its job while remaining in the owner's pocket Video stores might use the devices in conjunction with receivers in their exit doors to check out video tapes automatically, Zimmerman said

What about the effects of data flowing through your body? Don't worry, said Zimmerman The system uses a current of one billionth of an ampere. That, he claimed, is about one thousandth of the static electrical charge that a balloon will generate when you rub it on your hair.

Though the system could theoretically work at somewhat higher speeds Zimmerman said 2 4Kbps is about as fast as he feels comfortable with "as a scientist" in order to assure accuracy ❑

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Netscape keynote address turns into product demo

BY PATRICK MCKENNA

LAS VEGAS (NB)—Jim Barksdale, president and chief executive officer of Netscape Communications delivered the third and final Comdex Fall keynote. After a quick outline of Internet and browser histories, Barksdale's presentation turned into a product demonstration of Netscape Communicator and a new intuitive desktop interface component called Constellation.

Mistakenly called an operating system in certain media reports, Constellation is a customizable interface designed to "let information find you wherever you are on whatever machine you are using," Barksdale said in his address.

The trend from Netscape and Microsoft is to create a desktop experience that will allow users to access the information they want regardless of the source. Whether it is on the World Wide Web, an intranet, hard disk, or a CD, information is going to be made available directly to a users' desktops with new software in 1997.

Barksdale clearly stated Netscape's goal to plant its products in the corporate world. At this time the company will focus its efforts on corporate intranets with plans eventually to bring that technology to general consumer desktops.

Additionally he emphasized open platform computing. Using two ex-Microsoft employees, Barksdale demonstrated Communicator's ability to access Unix, Windows, and Macintosh-based data.

In his plans to focus Netscape products in the corporate environment, Barksdale said, "Companies spend 90 percent of their computing strategy time trying to keep people out. It should be the other way around."

From Barksdale's view, customers, partners, and resellers, all need to become part of the corporate intranet.

In a press conference afterwards, Barksdale said, "We see ourselves as a player alongside Microsoft."

Netscape also announced relationships with Marimba and Pointcast as the first contributing partners in the development of Constellation. At this time, Constellation is a code-name and more information concerning technical details and pricing will be revealed sometime before the mid-1997 debut of the product. ❑

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IrDA products beaming at Comdex

BY
LINDA DAILEY PAULSON

LAS VEGAS (NB)—More mobile computers and consumer electronics are integrating Infrared communications into their array of capabilities. Many of these manufacturers, including many of those recently announcing palmtops with Windows CE, adhere to standards created by the Infrared Data Association (IrDA).

Infrared data is transferred by a means similar to the technology in your TV or stereo remote control. When two infrared transmitters/receivers are aligned and activated they can transfer data between computers or serial devices such as printers.

The IrDA "Beam It Over IrDA" booth at Comdex displayed products by more than 20 firms with devices and applications using the IrDA standard. Clearly IrDA ports and software are becoming a feature routinely included on products. This includes Windows CE and the new handheld PCs, such as those recently introduced to the market by Casio and NEC.

"We've moved faster and caused more products to roll out than any other standards group," says Brian Ingham of IBM Canada's infrared market development group. "The computing and communications industries have embraced these standards faster than any other technical standard."

In the coming year, even more printers and portable peripherals will have IrDA serial ports, as will an increasing number of pagers and digital phones. Sony, for example, had a nifty little digital camera with an IrDA port on display. With the link between the camera and another IrDA device, you can, for example, instantly download digital photos to a laptop or print them without the need for cables.

Puma Technology and Traveling Software were among the software developers demonstrating their file transfer application software. And Nokia Mobile Phones and other cellular devices were on display.

These standards were created by the industry consortium to assure consumers shopping for a computer or peripheral that an item displaying the group's service mark works with other IrDA-certified equipment.

John LaRoche, IrDA's executive director, says the trade group's strongest estimates about the implementation of this technology are in the notebook computer market. He says about 60 to 70 percent of all notebooks shipped in 1996 will be IrDA capable. More than eight million notebook personal computers with IrDA ports have shipped to date, according to IrDA.

Says Ingham, "Consumer electronics are going digital. There is no longer a need to carry around a bunch of short cords." A sign on the booth wittily summed up the message of the standards group: "Friends don't let friends use cable." ❑

DEC's Quinn talks PC strategy

BY GRANT BUCKLER

LAS VEGAS (NB)—Digital Equipment Corp. has worked hard on its personal computer business in the past three years, and has made progress

According to Lucia Quinn, vice-president of strategic marketing and brand management for the company's Personal Computer Business Unit DEC has finally elbowed its way into the top 10 among personal computer makers and this quarter the PC business will at least approximately break even for the first time

Digital s PC business has been a sore spot for years In the early 1980s, the company launched its first PC the Rainbow 100, with support for the then-popular CP/M operating system A few months earlier IBM had launched its own PC with a then-obscure system called MS-DOS DEC turned out to have backed the wrong horse

More recently the company went after PC sales wherever it could find them—big or small business home whatever—and yet did not allow its enterprise sales force to sell its Intel-based PCs

Now Digital is giving its PC business more focus Quinn told Newsbytes at Comdex/Fall 96 that the company has shifted its emphasis away from climbing in the market-share rankings to focusing on a target operating system—Microsoft Corp 's Windows NT—and on target markets where it can do well

One of Digital s most drastic steps was to entirely bow out of the consumer PC market dropping its Starion line around the beginning of 1996 Within the business market, Quinn said there is special emphasis on servers because DEC has a stronger reputation in that area and because NT for the moment at least, is stronger as a server operating system

According to Quinn DEC has more expertise with NT than most PC makers because it was interested in the system earlier, thanks to its NT-running Alpha processor technology Digital originally saw NT as interesting mainly for its Alpha line but now believes it is vital to the Intel-based PC products as well In fact, she said, the PC Business Unit now leads Digital's NT strategy

Perhaps DEC's greatest handicap in the PC field, given the company's established customer base in larger systems, was the fact that its direct sales force until recently did not sell DEC PCs DEC had customers buying its other products who also were interested in PCs, and was missing out on the chance "The business was sitting inside the company waiting to be identified," Quinn said, but instead "we were either walking away from the business or we were handing it to Compaq "

Besides enlisting its own direct sales force to help sell the PC line Digital is aiming to stay ahead of its competitors in offering a broader range of NT-capable hardware To that end the company has launched notebook computers that are able to run NT—a feat that entailed resolving its own power management issues that had made NT impractical on battery powered hardware. Quinn said Microsoft had not expected to deal with NT-equipped notebooks for a year or more.

Quinn claimed DEC has been pleasantly surprised by the reception its NT notebooks have received. The company had not expected large sales at first but the machines have been very much in demand, she said.

Quinn acknowledged that DEC's PC Business Unit is not out of the woods yet The unit has the technology it needs to do well, she said The tricky part now is taking that technology to market effectively ❑

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Canadian firms out in force

BY GRANT BUCKLER

LAS VEGAS (NB)—Canada's technology companies made quite a showing at Comdex/Fall this year helped along by no less a spokesperson than former prime minister Kim Campbell.

Campbell is now Canada's consul general in Los Angeles She opened a press conference that Canadian government officials held during Comdex to promote Canadian manufacturers at the show In her remarks, Campbell said events like Comdex are important for drawing attention to Canadian products

As in past years the Department of Foreign Affairs and International Trade sponsored a pavilion for some of the Canadian firms showing their wares at the show Several other Canadian firms had their own exhibits

Among those present were

Janna Systems Inc. • Headquartered in Toronto Janna sells contact-management software. A newly released package Janna Contact Pro, adds workgroup scheduling and opportunity management to the basic Janna Contact package Another new release, Janna Contact Enterprise, combines all the features of the Pro package with links to Oracle and SQL (structured query language) Server databases Janna also announced that both new packages can be embedded in Microsoft Corp s Internet Explorer and Netscape Inc 's Navigator browser as ActiveX components At the same time the company added data synchronization, which makes it possible to "check out" a subset of data for use on a portable computer Janna Contact Enterprise starts at $699 per seat

Software Solutions • The Toronto-based firm s twist on selling World Wide Web page creation software is to bundle in Web hosting services Software Solutions will host up to 2 MB of hypertext markup language (HTML) plus embedded GIF (graphic interchange format) and JPEG (Joint Photographic Experts Group) graphics files for one year free of charge when you buy its WebXpress product or for three months free when you buy its Instant Homepage software Otherwise, the two packages are virtually identical, said Mark Pellicane Software Solutions president WebXpress sells for $89 95 and Instant Homepage for $29 95 After the free hosting period runs out, Software Solutions charges $7.50 per month, Pellicane said

Mediatrix Peripherals Inc. • Risen from the ashes of failed Ad Lib Inc. a maker of PC sound boards Mediatrix introduced Internet telephony technology that allows full duplex, high-quality conversations over the Internet The company let visitors to its booth test out the Audiotrix Phone by talking to a Mediatrix employee at its headquarters in Sherbrooke Que

01 Communiqan Laboratory Inc • The Toronto firm announced that the 32-bit version of its Communicate! software is available Communicate! manages fax data, voice, and paging communications through a single phone line from a personal computer running Windows The new version supports Windows 95 and NT and sells for $249 It is aimed at small office and home office customers, and includes an integrated contact manager, optical character recognition (OCR), and a color graphics editor

Ooriane International • Montreal-based Ooriane launched its repository computer aided software engineering (CASE) tool into the United States market. Nina Reich president of Ooriane also said Canada's Defence Department has chosen her company's software for use in developing a new personnel system data warehouse

Televitesse Systems Inc. • The Ottawa based maker of "software that watches television for you," as spokesperson Carol Martin put it, came to Comdex to launch its AccesTV video-searching software into the U.S market Though Televitesse has a few American customers Martin told Newsbytes it has not previously done much marketing there Now the company is seeking out value added resellers (VARs) to help it penetrate the U.S market further Michael Viugt channel sales manager said Televitesse is seeking VARs that "have a really good understanding of video."

Corel Corp. • Kanata Ontario-based Corel showed its much discussed Corel Office for Java applications suite and its new personal digital assistant (PDA), along with other products.

Enterprise Planning Systems • Based in Ottawa Enterprise Planning formerly sold its business planning software at high prices said David Flood the company's director of marketing. Now it gives the base model away for downloading on the Internet and has never been more profitable Flood claimed at Industry Canada's press conference The key is in selling add-on modules

Mitel Corp. • Ottawa-based Mitel showed what it said is the first telephone with a universal serial bus (USB) interface for computer-telephony integration.

LaserMedia • The Toronto company announced ActiveAbs, a new interactive fitness video that Erik Schannen LaserMedia's president claimed is the first of a new genre The software customizes the workout for each user, officials said. Due to be available in January, ActiveAbs is to sell for $29 95

Some of these firms came to Comdex as part of Industry Canada's Team Canada program This program may not exist in its present form by next year's show Norman Lomow deputy director of the Department of Foreign Affairs and International Trade s U.S. Business Development Division, admitted budget constraints threaten the program and one option is to turn it over to a private-sector company ❑

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Corel Ventura 7 and new multimedia titles launched

BY JEFF EVANS

Corel Corp. celebrated the official launch of Corel Ventura 7 at Fall Comdex in Las Vegas. Regarded as the principal professional-level page layout and document publishing program on the PC during its heyday a few years ago, Corel has completely re-written Ventura as a 32-bit program for Windows 95 and Windows NT.

"Corel Ventura 7 has reached a new level of ease-of-use along with unprecedented publishing power. This latest version allows users to publish one document to paper, to a portable electronic Envoy document or to the World Wide Web while consistently maintaining formatting and markers," said Corel chief executive officer, Michael Cowpland.

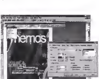
The new version of Ventura aims to offer the most alternative publishing options, for "repurposing" documents for print, CD-ROM or Internet delivery. The base program is supplemented with a host of additional applications including Corel WordPerfect 7, Corel PHOTO-PAINT, Corel Database Publisher, Corel CD Creator and many more.

Existing Ventura users (many of whom opted to continue to use Version 5 over the more recent Version 6, which gained a reputation for bugginess) are likely to welcome the new Ventura. Version 7 offers a range of new features including Corel Barista, which allows users to create Web documents that can be read accurately and consistently on any Java-enabled device. An editor for SGML documents is also included. A simple Publish As command allows users to publish Corel Ventura 7 documents to hypertext markup language (HTML) or other formats.

The new version also has hi-fidelity color printing, including the Pantone HEXACHROME color library, advanced color separation and prepress tools (including full-page preview, trapping and color imposition, halftone type selection, and support for PostScript Level 2). There's also RGB to CMYK TIFF file conversion, and more than 40 other graphic file formats and 50 text file formats supported.

Corel Ventura requires at least a 486 DX2 99 MHz PC with 16 MB of RAM, 256-color VGA display, 120 MB of hard-drive space, a CD-ROM drive, and Windows 95 or Windows NT 3.51 or higher. Realistically, a fast Pentium with 32 MB of RAM, a fast hard drive and a graphics accelerator with 2 to 6 MB of video RAM and the ability to display 16 million color images would be desirable.

Corel says it expects Ventura 7 to be shipping in quantity by the time you read this. The list price is US$895, with an upgrade price of US$249.



New titles released

Corel also announced the release of The Wild World of Madison Jaxx, an educational geography title in the Corel CD HOME line.

"The Wild World of Madison Jaxx is a comprehensive and fun way to learn about geography and current world affairs," according to Cowpland. The game, which shares some characteristics with the popular geography/detective title, Where In The World Is Carmen Sandiego, involves the player assuming the identity of any one of nine characters who track down criminals around the world. The sleuths include an archaeologist, an environmentalist, a filmmaker and a TV journalist.

The title, which comes on five discs, features digital video sequences and adventures that lead the player to learn about the languages, history, politics, and culture of peoples around the world, as well as geography. The goal of the game is to solve cases by discovering information in the course of a character's travels and conversations.

The game requires a multimedia PC, with at least Windows 3.1, a 486 DX2/66 MHz, 8 MB of RAM, 23 MB of hard-drive space, 256-color VGA graphics, 16-bit audio, and a CD-ROM drive. Its street price is about $79.

The latest addition to the Corel Medical series, The Amputee, began shipping on Nov. 20. The title, written by members of the Royal Ottawa Regional Rehabilitation Centre, is aimed at helping amputees, their families and the general public to "develop a better understanding of the physical, emotional and practical needs of amputees." The Amputee is divided into an Overview section that contains general information on the subject, followed by three additional sections on types of amputations, prosthetics and advanced prosthetic device profiles. ❑

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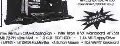

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Multilingual tools for software's Tower of Babel

BY LINDA DAILEY PAULSON

LAS VEGAS (NB)—The convention floor in Las Vegas often sounds akin to a modern Tower of Babel—a new language can be heard every few feet.

These language differences in the global marketplace continue to stymie some software developers wishing to venture outside the boundaries of their own language and culture but new tools from Accent Software International may bridge this gap

Throughout Comdex Accent Software International, a Jerusalem-based company with offices in the United Kingdom, demonstrated software designed to take advantage of the explosion in the Internet while solving some of the problematic aspects of multilingual computing

The company showed its Global Development Kit, WebTamer, a suite of Internet tools and Navigate with an Accent, a multilingual plug-in for Netscape Navigator. These products are designed to allow users to create documents in a variety of languages and alphabets including Arabic, Greek, Korean and Hebrew

"The software will make life easier," explained Zew Braun, an Accent Software spokesperson, about the company's Global Development Kit "Where developers used to have 20 localized versions of a software application—it's an OEM [original equipment manufacturer] nightmare An OEM might have a box that states it is the Italian version, but open the box—it's Japanese There are a lot of logistical advantages to having one software product "

The Global Development Kit allows languages to be used across any linguistic version of Windows.

Braun says the European market has been and will continue to be a large source of sales for the company

Accent first launched its Accent word-processing software in 1994 but greatly expanded the line in 1995 with dual translation programs and its first multilingual products for Internet use

Navigate with an Accent has begun shipping and will retail for $29.95 A beta version of WebTamer appears on the Accent Software Web site (see contacts) Product was scheduled to start shipping in December, with a suggested retail price of US$34 95 ❑

Contact:Accent Software, Web site
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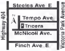

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Gates says no to PC naysayers

BY PATRICK MCKENNA

NB—In his Comdex keynote address Bill Gates, chief executive officer at Microsoft Corp never mentioned Oracle or Sun Microsystems but coolly stated his support for the personal computer (PC) In contrast he praised Intel chief executive officer Andy Grove's vision for PC.

"We ve come a long way since 1985, when I gave my first Comdex keynote" began Gates His address sketched a brief history of the PC before examining today's current topics surrounding the personal computer

"There are some people saying that we should throw out what we have done with the PC," said Gates. "The idea of a diskless (i.e, no hard disk) PC has its place We are going to see a lot of devices which feature the Internet, but they will all have compatibility with the PC This PC is the full-scale product."

Regarding the "diskless" computer he said manufacturers could save a few hundred dollars, but to see the overall cost, one has to consider the costs associated with building and maintaining a gigantic server-centric system "You will spend dramatically more to take care of a server system" he said.

Having dismissed the anti-PC crowd Gates said he greatly admired Groves keynote, which outlined personal computing into the year 2001 Groves described a microprocessor capable of handling 100,000 instructions per second—i.e 10 gigahertz.

Gates' vision of the PC began with a look at the integration of the Internet with productivity applications. He gave several examples of Office 97 and said the coming year will be defined by Internet integration into the PC desktop and all of its applications

Looking into a future filled with Intel processing power he said the future will unveil integrated speech recognition, visual recognition intelligent assistants greater natural language usage and more computers in schools and libraries.

In closing, he said "In 10 years our kids are going to say 'There was a time when computers could not read, talk and see.' ❑

MGI envells VideoWave

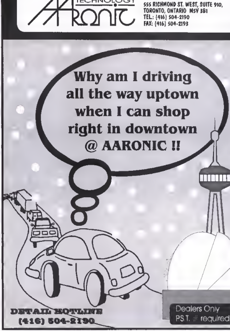
Richmond Hill, Ont-based MGI Software Corp previewed its new VideoWave digital editing and effects program at Fall Comdex in Las Vegas.

VideoWave, which is designed to give the average PC users an extremely powerful, inexpensive and easy to-use system for editing video on a home computer, is a 32-bit program for Windows 95 and Windows NT.

In a demonstration for The Computer Paper at the Silicon Northwest media night, a pre-release version of VideoWave was used to create sophisticated videos from raw digitized video footage VideoWave has a simple interface compared to other digital video editing programs like Adobe Premier On a notebook, VideoWave quickly and intuitively stitched together segments of digital video captured with a video capture card and created custom transitions, effects, animated titles and saved digital video files in a variety of formats.

MGI wants to make high-quality digital video editing literally child's play for the mainstream PC user VideoWave is expected to ship in the first half of this year, and will have a street price of about $129 —*Jeff Evans*

Contact MGI Web site http://mgisoft com



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Canadian PC graphics shine at Comdex

Being home to the world's leading PC graphics card makers, it was only natural that Canada was well represented at Fall Comdex

Montreal-based Matrox had a number of innovations to announce at the show including the new Rainbow Runner family of video add-ons for its low-cost Matrox Mystique powerhouse According to Matrox, the Rainbow Runner family "offers professional quality MPEG decoding scaling, live NTSC/PAL input or output, as well as a TV tuner These new features allow users to play back compressed MPEG format digital video at the best speed and quality, to input and output North American or European standard analog video, and to use their computer display as a TV set, with video in a user-definable window."

As well Matrox announced expanded support for Windows NT 4 0 including new drivers to support accelerated 3D rendering for OpenGL applications. Support for 3DStudioMAX and AutoCAD release 13 were announced For gamers, a special accelerated version of the Destruction Derby 2 game was included A number of games software developers, including Psygnosis, Activision and Criterion, have opted to develop software for the Matrox Mystique's 2D and 3D capabilities

As well, Dell Computer Corp announced that it was offering the Matrox Millennium graphics accelerator card in its top of the line Dell Dimension XPS desktop PCs The Millennium card with 4 to 8 MB of WRAM, supports up to 1,200x1,600 resolution with 16 million colors, at a high 110 MHz refresh rate Gateway Computer also announced that it would bundle the Mystique card in some of its consumer PC models Finally, Matrox announced that Microsoft has chosen to use Mystique cards to demonstrate Microsoft games software internationally *—Jeff Evans*

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Intel boss declares war on television

BY PATRICK MCKENNA

LAS VEGAS (NB)—"We are not in the PC business, we are in the business of creating interactive lifelike adventures and experiences," claimed Intel cofounder and chief executive officer Andrew Grove, as he delivered the opening keynote address at Comdex/Fall 96

Not being in the PC business means "we are in a war for eyeballs, it's TV or the PC," he said.

Grove's keynote addressed the birth of the first micrprocessor and moved quickly to a live video visit to a prototype Starbucks cafe in Seattle

Jumping into the future Grove sketched Intel's microprocessor for the year 2011 or "the warship," which he says will take the PC far beyond the television experience

Intel's 2011 microprocessor will conduct 100 000 instructions per second with the help of more than 100 billion transistors that operate at 10 gigahertz. To do this Intel has to create a layer inside a microprocessor .07 microns thick. Comparatively, a human hair is 100 to 150 microns thick. A layer in today's microprocessor is approximately .35 microns

Grove's keynote theme was "a revolution in progress." He said the railroads failed because they thought they were in the railroad business instead of the transportation business.

He promised Intel would not be in the PC business. Intel, according to Grove, is in a revolution to overtake TV and create what "users really want, a fully interactive 3D lifelike experience."

Grove showed the first Pentium Pro 200 with MMX technology as a demonstration of the PC's capabilities going into 1997 ❑

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Intel competitors remain positive despite losses

BY GEOF WHEELWRIGHT

With the dramatic success of Intel's Pentium and Pentium Pro processor ranges—evidenced by Intel's recent spectacular financial results—it's hard to imagine just how its many and varied competitors plan to survive in the desktop PC business. But surviving is just what they plan to do, with many pinning hopes on new hardware platforms based on Internet access devices as their potential saviors.

The Sun still shines

None has been more vocal recently about such plans than Sun Microsystems with its hyping of the PicoJava 1 technology. The American trade press was full of reports in mid-October about the company's deals with chipmakers Northern Telecom, Xerox, LG Semicon, Mitsubishi Electric America, Samsung, and NEC to license the new Java-based chips, which Sun claims will offer huge performance advantages over Intel chips when running Java code.

It is not entirely clear what all these Java-oriented processors will be used for, although many are expected to find their way into network computer-style desktop devices, while others could end up in wireless and handheld devices such as beepers and cellular phones. Xerox, meanwhile, is expected to use the chips in future office equipment offerings.

Windows NT on RISC?

Until the arrival of the Network Computer idea and Sun Microsystems Java technology, much of the hope for Intel's RISC-based competitors was pinned on the notion that RISC systems could be developed to use Microsoft Windows NT and run 32-bit Windows applications just as happily as Windows 95 or NT running on an Intel box.

As it turned out, when Microsoft did develop NT for those RISC systems, they certainly could run Windows NT applications, but only using specially written versions for RISC implementations of NT. And not enough software vendors bothered to offer such RISC implementations.

As if that harsh fact of life were not enough—a fact that severely limited sales of MIPS-based Windows NT boxes—the final nail went in the coffin for some RISC-based implementations of NT in October when

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Microsoft announced it was in the process of phasing out future development and engineering efforts for the MIPS platform.

Microsoft said the decision was driven by decreasing demand for MIPS-based systems from its customers and original equipment manufacturers (OEMs) In particular, Microsoft said its largest OEM for the MIPS platform—NEC Corporation—had decided not to provide the MIPS platform beyond the Microsoft Windows NT Version 4 0 operating system

The company further boasted that over the last five years, it had shown a strong commitment to the MIPS platform Microsoft has said however that it will continue to offer technical support to its customers who use Windows NT 4 0 on the MIPS platform

Cyrix recorded a net loss of US$16.4 million for the quarter ending June 30, compared to net income of US$7.5 million for the same period last year

Tough times at Cyrix
The seriousness of the challenge facing Intel s competitors is easily put in clearer perspective when you look at a company like Cyrix Corporation Over the summer, it reported revenues for the quarter ending June 30 of US$27 1 million—down a whopping 46 percent from the US$50 2 million reported in the same period last year. Revenues for the first six months of 1996 were US$78 7 million—down from US$135 4 million in the same period last year

As might be expected, the company recorded a net loss of US$16 4 million for the quarter ending June 30 compared to net income of US$7 5 million for the same period last year.

"Looking beyond the second quarter Cyrix's largest challenge is to grow our customer base " said master of understatement and Cyrix president and chief executive officer, Jerry Rogers, at the time of the fiscal announcement "The 6x86 processor is a very competitive product in today's marketplace outperforming equivalent Pentium and Pentium Pro processors at a significant discount "

Rogers also hinted that it was very much in the computer industry s interests for Cyrix to survive its current troubles "We know that we must drive this value proposition as aggressively as possible in order to obtain market share for the company success for the product line and value for the shareholder " Rogers suggested "The survival of competition and product innovation in the x86 marketplace demand unyielding focus and execution "

At the same time Cyrix made clear just how it intended to do this by announcing aggressive pricing for its P 200 desktop PCs For example, the price of Cyrix s fully configured 6x86 P 200 system was unveiled in July at US$2,299 loaded with 16 MB of EDO DRAM, a 2 5GB hard disk drive WRAM graphics, 8x CD ROM stereo sound and speakers and a 15 inch monitor

And the company suggests that it is starting to get corporate orders for systems using this technology "Since its introduction 30 days ago [when the pricing was announced in July] the P 200 PC has become our best selling model " said Steve Lapinski, general manager of the Cyrix Systems Group "We're seeing strong demand from power users in *Fortune* 1000 companies, as well as small businesses and home offices where performance is key to the buying decision. For US$2,299 users can now standardize on a high-performance platform for all PC software from Windows 95 to Windows NT to Windows for Workgroups "

Meanwhile at AMD.
Things aren't much better at longtime Intel rival AMD which in early October reported a net loss of US$38,362 000 on sales of US$456 862,000 for its third quarter ending Sept. 29 Sales for the like period of 1995 amounted to US$606,953 000 which resulted in net income of US$42 million

According to AMD however, this is still good news "Overall, bookings improved significantly from the levels of the second quarter, but the book to-bill ratio remained below 1 1," said chairman and chief executive officer WJ Sanders III.

Continued on page **111**

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Windows for palmtop computers arrives

Microsoft sees smaller, faster OS used in range of entertainment and communication devices

BY GEOF WHEELWRIGHT

Microsoft Windows has come to handheld computers. After six years of domination in the desktop and notebook computer markets, software giant Microsoft has finally found a way to produce a version of Windows that it says is small enough, fast enough and flexible enough to run on a handheld computer. Casio and others companies delivered handheld systems (or HPCs, as Microsoft calls them) to retail stores during the Windows CE introduction at Fall Comdex in November.

Known as Windows CE, this is a new version of the Windows operating system that Microsoft says will not only be used in the handheld devices that were launched by a number of key consumer electronics companies at the annual Comdex computer trade fair in Las Vegas in November but will also find its way into a range of communications, entertainment and mobile-computing devices that can communicate with each other, share information with Windows-based PCs, and connect to the Internet.

Microsoft says that more than 50 leading hardware and software companies have now committed to developing handheld PC products based on the Windows CE platform including Compaq, Hitachi, Casio, Hewlett-Packard, LG Electronics of Korea, NEC and Philips.

RISC powered

These systems won't necessarily be running on Intel chips. In September NEC Electronics and Microsoft announced that NEC's new VR4101 processor—a single-chip, high-speed, low-power 64-bit MIPS RISC device—would be able to run Windows CE and was expected to be used in many CE-based devices.

NEC and Microsoft announced that the VR4101, the latest in NEC's MIPS RISC processor range, was one of Microsoft's key reference platforms in the development of

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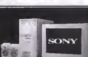

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Windows CE and that NEC engineers were assigned to the Microsoft campus in Redmond, Wash during the development of Windows CE.

"We have worked closely with Microsoft for two years to create a new processor optimized for Windows CE," says Katsu Hagaki, advanced engineering marketing manager for NEC Electronics "Together, the NEC VR4101 MIPS RISC CPU (central processing unit) and Windows CE will set a new standard and allow system manufacturers to create an effective generation of handheld personal computers."

NEC says the VR4101 processor is optimized to provide Windows CE-based HPCs with a high-throughput low power-consumption device The 64-bit MIPS RISC processor claims 33 VAX MIPS performance and 132 MIPS/Watt performance at 3 3 volts (V) and further aims to provide many of the functions required by handheld PC manufacturers such as modem capability and access to peripherals like the LCD screen infrared interface, audio interface memory and keyboard in a single chip

In addition NEC suggests that the VR4101 CPU also offers several advantages as a single-chip solution for HPCs One highly touted feature is its high speed multiply-and accumulate (MAC) component. The MAC enables DSP like instructions so that using software emulation the VR4101 device can act as a modem chip as well as the CPU This saves a manufacturer cost space and power in developing a communications-enabled portable device without a separate modem or

The LGee made by a Korean company and the Velo from Philips are two handhelds using Windows CE that will soon be available to compete with Casio's Cassiopeia

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communications chipset

Microsoft has also worked with Hitachi to include support for its RISC microprocessor in Windows CE. Hitachi also says it is providing its 32 bit SuperH RISC architecture-based SH 3 microprocessor as a "key engine" for the Windows CE platform for handheld PCs The operating system has been ported to the SH-3, and as part of the collaboration the development environment and Microsoft's Visual C++ language tool chain are available for use with the SH 3 Several major original equipment manufacturers of Windows CE-based handheld systems have selected the SH-3, including Casio, Hewlett-Packard, LG Electronics and Hitatchi itself.

In making the announcement about the relationship between the two companies, Tsugio Makimoto executive managing director in charge of electronic components operations at Hitachi waved the company flag and suggested his company's processor really provides the best support for all the goodies in Windows CE

"This important collaboration will make available to the consumer handheld and consumer appliance platforms that are designed for convenience and simplicity including features such as long battery life built in communications and Windows compatibility Microsoft is the pre-eminent developer of software technology Hitachi by virtue of its long experience in integrated circuit technologies, is uniquely equipped to apply its skills to the success of the venture" Makimoto says. "The SH is Hitachi's flagship semiconductor product and has achieved considerable customer and market acceptance The SH provides superior performance particularly for personal access products which inherently have low power requirements and high code efficiency"

The software story

None of these products are going to be much use in the long term, however, if there isn't much software support. But Microsoft claims that it also has this under control

Late last month, it announced support for Windows CE from ACE Technologies Agri-Logic, Aranit Software, bsquare development, GoldMine Software, Joey Technologies, LandWare Nettech Systems, RW Information Technologies, SPYRUS and Xircom as companies that have announced their commitment to developing either software applications or hardware peripherals.

Meanwhile AT&T Wireless Services joined the list of companies committed to providing wireless messaging products and services for the platform.

The prospects for success

The great thing about the whole Windows CE scenario is that Microsoft is positioning these products as desktop companions and therefore you don't have to choose whether you want your data on the desktop or the hand held, it will be synchronized on both

The short term problem will be a lack of software designed for the platform although having pocket editions of Internet Explorer Microsoft Word Excel and an e-mail package should keep many people happy for a consid

Continued on page 100

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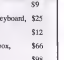

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Apple responds to Windows CE debut

LAS VEGAS (NB)—Apple Computer Inc. has issued a statement called *Newton OS and Windows CE: Fact or Fiction*. Maybe the new kid on the block has all the money but Apple says connectivity and integration with a desktop operating system (OS) are not new ideas to the Macintosh and Apple's personal digital assistant (PDA) operating software called Newton.

The statement attacks perceptions about the assumed advantages of Windows CE compared to Newton OS. "Microsoft Windows CE is easier to use" is typical of the alleged myths that Apple says it addresses.

"Ease of use is a singular strength of the Newton platform and the hallmark of Apple," begins the response.

Bill Gates admitted he liked handwriting recognition as a means of writing messages to be stored in a handheld device. However he added that existing technology was not sufficiently dependable for use in a handheld device at this time. He made similar statements regarding speech recognition as part of his explanation for choosing a keyboard as the input device for Windows CE devices.

Apple says success in mobile computing is dependent on offering customers choices. "With the MessagePad 2000, users can choose from an onscreen software keyboard that can be brought up at any time to make entries with the pen, a larger plug-in external keyboard for touch typing with the MessagePad 130 and 2000 computers, and an integrated touch typing keyboard with the eMate 300. The same platform also supports pen navigation," the article claimed.

Concerning the claim that Newton will disappear now that Windows CE is on the scene Apple stated, "Just ask 250 independent software vendors and 300 value-added resellers and system integrators supporting the Newton platform if they would like to start over again with a new operating system."

A spokesperson for the Newton group told Newsbytes, "We are hearing a lot of hype about Windows CE and the HPC, but the truth is they have zero market share." ❑

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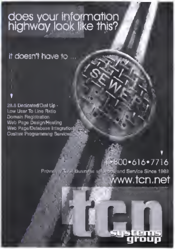

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Windows for palmtop computers

Continued from page **98**

erable time to come. And if there is any single software franchise that's good at quickly attracting developers, it has to be Microsoft and the various versions of Windows.

Will it be enough to attract those who have wavered in their decision to buy a hand held system in the past or allow the chorus of Windows CE-compatible machines to make an appreciable dent in the market held by experienced players such as Psion? Only time will tell, but it is going to be a fascinating battle to watch. ❑

Psion ready for the challenge

According to Peter Norman managing director of Psion UK, the company is not worried about the release of products based on Microsoft's Windows CE operating system for handheld computers, even though they will come from major PC market manufacturers such as NEC, Compaq and Casio.

"We have always kept a close eye on competitive products and have seen those from Apple, Sony Motorola and others come into the market," says Norman.

"Microsoft is probably the most credible threat to the marketplace, but they have a different angle on the marketplace than us in terms of technology and their approach—also in terms of market positioning. They look at it as a PC companion. Theirs is an information device that works with other information devices. Ours can be used in an isolated sense—it's a fundamentally different proposition."

While Microsoft cannot be easily dismissed, Psion has a long history in the market. Psion was founded in 1980 and boasted record sales and profits in 1995 with reported turnover of £90.55 million (around US$200 million) against 1994 figures of £61.29 million (approximately US$130 million), which was up 48 percent on the previous year's results.

The company's first handheld computer, the Psion Organiser, was released in 1984 after Psion had spent its first four years principally as a software developer designing everything from games for the home computers of the day (the BBC Micro, Sinclair Spectrum and QL) to an integrated software suite (Psion Xchange, which included word processor spreadsheet and database applications) that was well ahead of its time.

That strength in software development has not been lost. In recognition of the fact that its greatest strength lay in the software built into its machines, in July Psion announced the formation of a new company Psion Software PLC, to license its operating systems and applications software. The company says it hopes the move will encourage and assist other companies in bringing products to market such as palmtops, sub-notebooks, smart phones, intelligent terminals and mobile Web browsers using Psion's previously proprietary technologies.

Psion says that it sees operating systems and applications designed for solid-state, handheld computers as being fundamentally different from PC platforms. "They have to start immediately, be power and memory efficient and never lose the user's data. They have to be responsive and bug free and offer deep functionality in small code size whilst appearing intuitive to novice and power users alike," suggested Psion in its announcement of the new company. "With 13 years experience developing such expertise and with over two million units sold, Psion is making its platforms available to licensees."

According to Psion founder and chairman David Potter, the idea is to get its software established as a handheld software standard.

"One of our strategies is to establish our platform as an open standard. We are already recognized as the world leader in the palmtop computer market and this sector will inevitably attract more players as communication and computing technologies continue to converge," he says.

"We expect initial licensing revenues to come in during 1998. Our licensing strategy will allow us to participate in emerging markets without defocusing our existing business."

—*Geof Wheelwright*

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Cassiopeia palmtop a charmer

Casio employs Windows CE in new handheld PC

BY DAVID TANAKA

Cassiopeia handheld personal computer
Models A-10 (tester) with 2 MB RAM and A 11 with 4 MB RAM
From Casio Canada
Suggested retail price $698 ($895 for the A 11)

Windows has come to the palmtop computer—or is it that palmtops have come to Windows? In a sense both are true. Microsoft, with its Windows CE 32-bit operating system, and several manufacturers have joined forces to create the handheld personal computer, or HPC, the latest variation on computers that fit in your pocket.

What it means is that if you are a Windows 95 user you can now buy a palmtop computer from one of several manufacturers and be greeted with a graphical interface you'll immediately recognize and be comfortable using. If you're a Microsoft Word, Excel or Schedule+ user, you'll also get a set of applications that will be familiar to use and compatible with the full blown versions residing on your Windows 95 desktop computer. And if you want to synchronize your organizer files, or move spreadsheets or word processing documents between your handheld device and your desktop PC, a slick serial cable-based (or infrared) transfer utility is included.

The subject of this review is the Cassiopeia A10 from Casio Canada Ltd., one of the first companies to bring a Windows CE product to market.

Windows CE, what's that?

Windows CE is a 32 bit operating system that uses a graphical interface, which closely resembles the Windows 95 and NT 4.0 desktop. It uses a subset of the Win32 API, which means that Windows 95 software developers should be able to develop applications for Windows CE devices with tools they are already familiar with—but within the constraints of the smaller environment. And by the way, the CE doesn't stand for anything officially, but speculation is that it could stand for Compact Edition or Consumer Electronics.

You might think of CE functionally as a stripped-down version of Win 95. Many of the features are there on CE, but the subtleties or breadth of customizability are lost. For example, TCP/IP is supported, which means you can use a Windows CE device on the Internet (and in fact, both an Internet mail program and Microsoft's Pocket Internet Explorer Web browser are included with the Cassiopeia). However, only PPP is supported, so if your service provider uses some other dial in protocol such as SLIP, you're out of luck.

Instead of using a mouse to navigate, you can use a stylus on the touch-sensitive screen to double-click, drag or highlight items (you can also use keyboard shortcuts and a Windows key is included on the Cassiopeia). Since there's no mouse, right mouse button functionality is accomplished by depressing the ALT key and tapping with the stylus, although the functions are limited.

The Windows 95 style interface will undoubtedly be a major selling feature on these devices. However, the scale of the Windows elements has its advantages as well as some drawbacks on a device with such a small screen. On the positive side, the controls are large enough to manipulate with your fingertip, so you don't always have to

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use the stylus for navigation But the size of those elements also has its drawbacks The task bar main menu bar and scrolling bar are about the same width as on my Windows 95 desktop displayed on a 17-inch monitor when it's set at a resolution of 1,024x768 This means that, comparatively those controls are taking up a lot of screen space on the Cassiopeia On Windows 95 you can use the auto-hide option to clear the task bar off the screen when it doesn't have to be accessed. In Word for Windows 95 you can invoke the clean screen option which hides all the menus and tool bars On Windows CE or Pocket Word these are not available—pity

But given the constraints of the hardware (limited RAM small screen dimensions lack of hard drive etc), Windows CE works Individuals will quibble over what Microsoft chose to leave out of the operating system or how it implemented certain features and my quibbles will be different than someone else's. However if you want a handheld computer that looks and sort of acts like your Windows desktop PC, and you are willing to live with the limitations inherent in these small devices you'll probably be happy with one of these new HPCs

When Microsoft was working with hardware manufacturers it defined a minimum set of features it wanted all Windows CE palmtops to include, among them a 480x240 pixel monochrome screen capable of showing four levels of grey, at least 4 MB of read-only memory capacity, at least 2 MB of RAM capacity, infrared support and a PC Card slot

Enter Cassiopeia

The above specifications aptly describe the Cassiopeia A-10 (an A 11 is also available coming with 4 MB of RAM instead of the A 10's 2 MB) Physically the Cassiopeia is about the same size as a Psion 3c Hewlett Packard 200LX or Sharp Zaurus, three of its main competitors It measures 2 65x17 5x9 2 cm (1x6 9x3 7 inches) and weighs 380 g (13 4 oz) with batteries

The Cassiopeia is powered by an Hitachi SH 3 RISC processor, which is also being used by most of the other HPC manufacturers (Philips is using its own TwoChipPIC processor in the Velo and NEC is powering its MobilePro with an NEC Vr4101 MIPS RISC chip)

Performance is leisurely, with the hourglass showing up briefly every time you load an application or access a file It feels kind of like Windows 95 on a 486 with 8 MB of RAM However, the instant-on feature means you don't have to wait while Windows boots up and both Word and Excel load much more quickly than the Windows 95 versions of those applications. Moreover you can leave items like your appointment calendar or contact database running, and they are instantly available when you turn the machine on

The keyboard is no worse but no better than ones found on other palmtops, which means it is awkward but usable if you master a two-finger pecking style For example I did manage to work for about an hour on this report on the flight back from Las Vegas without becoming too frustrated, and I know of one reporter who regularly composes 1 000-word stories on his Psion The feature I like most on the Cassiopeia is the backlit screen which allowed me to work in the darkened cabin of the evening flight with the screen completely visible

Apps you can use

The Casio unit comes with Windows CE Pocket Word Pocket Excel and a personal information manager in ROM These are immediately available for you to use as soon as you turn on the unit In the interests of saving screen space both Pocket Word and Pocket Excel combine parts of the menu bar and tool bar into a single row

Pocket Word includes basic text formatting abilities, such as bold italic underline centering and the ability to change typefaces and sizes There are no stylesheets although you can toggle between normal and outline views Also not included in the Pocket versions are a spell checker and thesaurus What I miss most with Pocket Word however is a word counter—and you can't use the old trick of searching and replacing spaces to get a rough word count because although Pocket Word will do this task it won't tell you how many replacements it made

Continued on page **110**

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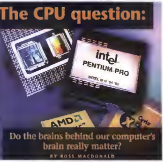

Do the brains behind our computer's brain really matter?

BY ROSS MACDONALD

It was once the case in those heady lucid days of yore that shopping for a personal computer essentially came down to one major decision Apple or PC? And you knew you could count on finding a Motorola CPU (the central processing unit—or heart and soul—of your system) driving the former or an Intel CPU under the hood of the latter

However, just like all other things computer simplicity in shopping is no longer the case Not only have the technologies and options offered to personal and small and home office computerists become far more sophisticated but there are several corporations now competing for your dollar right down to the level of the CPU

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Where there are quite a few chip suppliers out there, normal shoppers from within the PC camp are most likely to encounter systems built around a Cyrix, AMD or Intel CPU—the three major players in the CPU manufacturing game.

I contacted each of these manufacturers, as well as an unaffiliated computer "expert" to find out just what the differences between makes of CPU might be—if any—and whether those on the hunt for a new computer should seek or avoid any particular brand.

The Intel Pentium Pro chip is not included in the following discussion as no "clone" or compatible chip has yet been made available by Intel's competitors that will work with a Pentium Pro-certified motherboard. Pentium Pro purchasers will not be faced with alternative choices at this point.

What our independent expert says

Made famous within these pages not so long ago in an article discussing CPU upgrades for portable computers (see *TCP* Oct. '96) Scott Knight is president of Platinum Upgrades in Vancouver, which happens to be in that very business.

As a purchaser and user of various types and makes of CPUs, Knight was asked whether there are any important differences between brands in terms of compatibility and performance, as well what the end user might expect when presented with a system that has employed one of the Intel, Cyrix or AMD choices.

"Each of those companies produces their own chip," he says. "Intel with the Pentium, of course, Cyrix has the 686 series and AMD chips are called the K5."

Knight explains that those different names are the result of that well documented legal battle some years ago. Intel was unable to copyright chip names that were numerical—like 386, 486, etc.—so it decided to give its new generation (which logically would have been called the 586) the name Pentium because a word can be copyrighted.

"As an interesting aside," Knight says, "there was another prominent chip manufacturer called NextGen which was recently bought out by AMD and it's from there that AMD gets their K5—it was actually NextGen that developed their own Pentium compatible processor and AMD acquired that technology when they bought the company, having only to stamp the AMD name onto the chip."

He also explains that Cyrix, based in Ireland, got started manufacturing the "FastMath" co-processor for 386SX and DX chips, then gradually began developing its own CPUs in the 386 and 486 families, implementing little features like write-back caches and increasing the cache sizes in the chips.

"The cache technology can make a really big difference in a lot of these processors," Knight says. "The pin-out [socket compatibility] is the same on these processors, a lot of the functions are the same, the code set used is the same—you know, that 8088 or whatever they call it code set that runs all the software out there—but each company employs various little tricks to try to make their processor perform a little notch faster than anybody else's."

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It all boils down to subtle technological tricks, apparently because the basic process of CPU manufacture for the PC market has generally involved a company like Intel releasing a code set for a new chip—say the 486—prior to the chip's introduction because motherboard manufacturers and software developers need to know how to address the chip when it becomes available. That way you can buy software for a new chip on the same day the CPU is released because software makers have had the code for some time prior.

"So, all the CPU makers have to adhere to that established code in order to ensure compatibility but then begin exercising their little tricks to try and gain some competitive edge," says Knight.

He says that most of the performance tweaks used by the various manufacturers are applied to the internal cache.

"A cache is essentially a guessing game. When you're trying to implement a cache—whether on a disc or in a CPU—you're trying to guess what the next instruction to the chip is going to be based on all the previous instructions. A write-back cache, for example—which is faster than a write-through cache—is quite simply a better guesser because there are more hits based on the algorithm it uses."

Not all CPUs have a write-back cache "because that technology has to be supported by the hardware and the firmware and the BIOS. So it's just not possible for a chip maker to call up the motherboard manufacturers and say they're going to switch to a write-back cache because that would mean a whole new program of research and development for the motherboard makers to be able to support it," he says.

Knight says the biggest issue facing somebody buying a PC these days is motherboard compatibility, i.e. "what the board can support both in terms of the BIOS and what the actual CPU can support."

"Software isn't really a concern—I think every CPU manufacturer's worst nightmare would be to get a reputation for being unreliable with any software, so they put a lot into making sure that aspect is okay. But hardware can present its own problems," he adds.

Anyone who's being using computers for any length of time will already know that virtually all the CPU makers have run up against various specific pieces of hardware—a particular interface card or faxmodem, for example—that just don't seem to run, or run properly, in combination with their particular CPU or a particular model of their CPU or a particular model of their CPU on a particular make or model of motherboard.

In Knight's opinion, since all the manufacturers run across such incompatibilities, there's no real advantage or disadvantage to any of the major makes in that regard because it's only what's on the lists of incompatible hardware for each that will be different. The incompatibility lists for the three manufacturers are likely to be equally long.

"When it comes right down to it, probably the main reason that Intel's competitors are getting deeper into the PC market is the cost—Cyrix and AMD chips perform just as well as a Pentium but cost less. A Cyrix 686 chip, for example, fits very well onto a motherboard made for Pentiums—and I should mention that the Pentium motherboard is now considered rather old technology because it's been around for a while—but because the Cyrix chip is cheaper makers and retailers can keep the cost of the whole computer down," Knight says.

That said, he says he has noticed that the co-processor component of the Cyrix 686 is considerably faster than the one in Intel's Pentium. So, people planning to use a lot of co-processor-dependent applications (CAD, for example, or sophisticated desktop publishing) might actually want to seek out a computer with a 686 inside.

In a nutshell, according to Knight, the main things that will determine whether a computer builder puts an Intel, Cyrix or AMD chip in a machine is which motherboard they're going to use and how much influence final cost has on that choice. It's important to remember too, however, that a lot of the benchmark measurements used by chip makers which yield numbers to support claims of "faster performance" or "equal performance for less money" do not reflect the overall performance of the computer.

Hypothetically, benchmark numbers provided by a maker saying that its floating point unit (FPU) runs 20 percent faster than a competitor's are likely to be true. But, when put to work, that enhancement might disappear as it labors alongside system bus restrictions or software idiosyncrasies or even hardware limitations.

Further, even if none of those variables exert an influence, empirical evidence from testing dozens of computers has demonstrated there's no significant difference to the daily computing experience if a task normally requiring 0.8 seconds (say altering the margins in a word processor document) can be done 20 percent faster.

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All things considered, Knight's opinion on the question of CPU brands might be summed up by saying there are no significant compatibility and performance issues to worry about with the three major players so you can happily buy whatever computer system suits you best regardless of which chip's inside.

What Cyrix says

Cyrix marketing director Steve Lapinski fully agrees with Knight's opinion that a Cyrix CPU will equal or better the performance of an Intel of equivalent speed but, of course, with an explanation.

"I think another really important point of differentiation is that, based on the architectural differences between a Cyrix and a Pentium, ours will allow you to play 16-bit and 32-bit software without having to change the platform. In other words, Intel has the Pentium and the Pentium Pro, and the Pentium Pro will actually slow down the performance of 16-bit applications considerably."

More specifically, Lapinski says that as people gradually move more toward 32-bit applications, they'll have to change motherboards if they're depending on an Intel Pentium whereas the Cyrix chips will still optimize the performance of the newer software without requiring significant hardware modification.

Lapinski explains that Cyrix is able to accomplish "equal or better for cheaper" due to the architectural differences between the company's 686 and the Pentium.

"Both processors are what's called superscalar—they contain a floating point unit and a primary cache and other features. But these have been optimized in the way we designed the 686 processor, which, for example, has the calculation functions like integer and floating point built in using a highly advanced architecture which also makes really basic things like register re-naming, out of order completion and branch prediction, etc. a lot faster and a lot quicker.

"The bottom line of all that is that our architecture eliminates many of the data dependencies and resource conflicts that the processor has to experience in order to achieve higher performance. Our processors are able to eliminate that where a Pentium processor has some issues as it goes along with trying to eliminate those dependencies. Each 686 is optimized for maximum instruction throughput."

Offering a less complex example of what that means, Lapinski explains that an Intel processor might experience what are called "stalls in the pipe" as it executes massive amounts of instructions while a Cyrix 686 chip has two pipes—thus eliminating such stalls. This, according to Lapinski, results in a five to 10 percent increase in performance over an equivalently rated Pentium chip.

However, Lapinski stresses that the 686s are industry compatible with all existing software while still incorporating these kinds of enhancements.

The cost saving element—in terms of Cyrix chips being cheaper than Intel chips—is explained in terms of the company's infrastructure.

"I can first say that we're 400 people versus Intel's thousands, so our cost structure is a little bit different. Our manufacturing costs also benefit through having IBM as a partner keeping in line with the size of an Intel giant. Given that combination of partnerships between IBM and Cyrix and getting access to the latest technology processes, we're able to offer very competitive prices."

What AMD says

Dean Whitehair, public relations manager for AMD, also agrees with Knight's assessment of CPUs.

Whitehair says the end user will notice very little difference between makes of CPUs in consumer-level computers.

"As far as performance goes, though, it's not necessarily clock speed—or megahertz [MHz]—you should be looking for so much as comparable performance on your application," he says. "That's why both Cyrix and AMD have embraced something called the 'P' rating, which is a measure of performance based on real life applications ... based on [a benchmark called] Winstone 95."

Whitehair says that, where such benchmark testing shows performance differences between the various makes of chips, those differences may not be noticeable to the end user because many show up as mere fractions of a second in execution within an application. Essentially, AMD's marketing position is that their chips provide the same level of performance as Pentiums where the AMD "P" rating is the same.

"I think what you're going to see with all the new advanced architectures that all microprocessor manufacturers are going to right now is that core clock speed is going to become more and more irrelevant—especially for the end user. Unfortunately, right now

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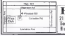

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they're still measuring CPU performance based on clock speeds But what we're seeing, for example is that AMD's K5 with a P rating of 133 has a core clock speed of only about 100 MHz but it performs as fast or faster than a Pentium 133," Whitehair says

"This is accomplished through a combination of architectural enhancements to the RISC [reduced instruction set computer—an architecture that reduces the complexity of a chip by using simpler instructions] core of the CPU and some proprietary engineering that we've done here That's going to come into play more and more with the next generation of chips that will have MMX [Intel's new Multimedia Extension] and other extensions too Clock speed is just not going to be a good measurement any more"

Whitehair further anticipates that the higher level, fifth and sixth generation processors that are just beginning to appear now will have performance enhanced far beyond what's indicated by a simple clock speed rating

Where the K5 chips are now popular among entry and intermediate level computers this is only a function of the fact that their most popular CPUs are currently rated at the P 75 and P 90 level However chips with a P rating of 120 and 133 are going to be widely available by the time you read this so AMD is bound to be encountered more and more by computer shoppers at all levels of sophistication—especially as plans are in the works to introduce higher rated chips in each quarter of 1997

But cost remains a prime consideration against the Intel counterparts

"What you're seeing among computer manufacturers currently using the K5s—for example Everex is selling a fully functioning multimedia desktop machine including monitor for under US$1 000 and that's based on a K5 with a P rating of 90—is that the cost of a whole system is kept much lower Still the AMD K5 is totally socket compatible on the Pentium motherboards so only the CPU ID in the BIOS would have to be changed if someone actually had a Pentium machine and wanted to put a K5 into the socket," Whitehair says

"The computer would still run even if you didn't change the CPU ID—it would still come up thinking there's a Pentium in there—but what making the BIOS change does is give the machine the enhanced performance recognizable in the K5 architecture"

Like the others Whitehair is confident that performance and compatibility are not at issue between makes It's in the reduced cost combined with equivalent or better performance that the real advantages lie in going with a non Intel CPU

(An interesting aside to the AMD story is that when IBM approached Intel with the decision to use DOS on the first PCs, they said that they'd only use Intel chips if the company had a second source as insurance against any production disasters. Intel then licensed the manufacture of those early CPUs to AMD as AMD was already well established as a chip manufacturer.)

What Intel says (at last)

It's been well established so far that Cyrix AMD and even Scott Knight use Intel chips as a yardstick. Allusions like "as good as" "faster than" "cheaper than," etc have liberally

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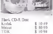

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peppered the commentary so far As you might anticipate Intel has its own take on the CPU cost/quality question

Frank Spindler Intel's Pentium processor marketing manager says there are a number of issues beyond performance and compatibility when it comes to considering which CPU to purchase

"We feel quite strongly that the Pentium processor is the clear choice for any type of consumer First because there's only one Pentium processor and that has come to mean a lot—it represents Intel technology and though it's difficult to describe all that is involved in bringing that technology to the marketplace there are incredible resources and investments that we apply to the development the validation and the production of our microprocessors

"There's a tremendous amount of engineering in developing the product " Spindler continues and dramatic resources in terms of validation of the microprocessor to ensure the performance to ensure the compatibility to ensure the functionality And then the next step is the whole process of manufacturing technology that goes into building these very very reliable parts in very very high volumes

Spindler says that overall "what somebody who is purchasing a system [with a Pentium processor] gets is the benefit of a processor that has shipped in the tens of millions so it's been proven over an incredible variety of systems of user types of application software of operating system software of add in cards, of different types of configurations—everything from entry-level PCs up to the highest-end workstations and servers "

Told that Cyrix and AMD make the same claims Spindler enigmatically says that "there's the statement and there's the level of effort and actual meat behind that statement He adds that Intel spends hundreds of millions of dollars on microprocessor validation

Spindler assures me that assertions by others regarding superior performance in at least specific areas of the competitors chips might be most tactfully described as "a major disconnect on the part of those particular individuals"

He points out that there are different ways to look at performance "and in some cases others may run a particular benchmark and claim that that represents the overall performance of the processor But we don't look at it that way at all We actually do performance reports on our processors and we take a broad variety of industry standard benchmarks and show the results of our processors performance on those benchmarks We feel very good about where our processors stand on those "

In direct contradiction to claims by all others cited here Spindler is sure that the floating point in the Pentium processor outperforms the alternatives dramatically

"It's much much faster than other devices Typically things like 3D and graphics are floating point intensive and if you look at any floating point-oriented benchmark—like Spec Floating Point or Whetstone for example—the Pentium is extremely strong "

Asked how such performance differences might manifest themselves to we simple computerists slaving away in front of a monitor

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Spindler emphasizes that that's really a function of the particular application you're looking at.

"VRML [virtual reality modeling language] browsers are becoming increasingly floating point intensive for example, so a faster floating point will be quite noticeable whereas common spreadsheets and such don't use the floating point as much so you may notice no performance difference at all.

"That's why we think a lot of times people are going to go back to what is proven," he says.

"Without getting too technical, there are power consumption differences between processors too—the power consumption is quite a bit lower on the Pentium processor than on some of the alternatives—and in general, the higher volume of motherboards has been developed around the Pentium processor," he adds.

Spindler says Intel "always uses the best technology and techniques as we develop new generations of our microprocessors," and that in some cases the competitors' devices "employ different techniques that allow them to make the claim that their product runs equivalent to a higher speed Pentium processor for example but again, I think somebody should look at a broad variety of benchmarks before making an overall performance comparison because those claims are generally made on a particular type of a benchmark."

Concluding his remarks by addressing the cost issue, Spindler says, "you really need to look at what's out there. There are Pentium processor based systems that are selling at all the way down to entry-level types of prices. Even at the entry level a computer is a significant investment and I think that the buyers are looking for something that they know is proven technology. Proven in terms of compatibility, proven in terms of validation, proven in terms of performance. And all that applies to the Pentium processor."

Synthesis

Which sums things up rather neatly if in a slightly convoluted manner. Where Lapinski, Whitehair and Spindler have not unexpectedly pitched for each of their respective employers, it seems there's much tacit agreement that performance and compatibility should not be a concern for us as we shop for a system. Beyond that, each has expressed a collection of proprietary advantages for their particular product. As consumers, we seem to be in a win-only position... for a change. ❍

Cassiopeia palmtop a charmer

*Continued from page **102***

Pocket Excel includes a good set of formulas, the ability to format cells and also supports multi sheet workbooks. I'm not much of a spreadsheet user, but I've loaded a couple of small spreadsheets I use regularly into the Cassiopeia, which is very handy to have. On the downside, the small screen allows only a limited number of columns to be shown, so I have to scroll around a lot to find the information I need.

Along with the built-in applications, the Cassiopeia also ships with a Windows CE CD-ROM, which contains the applications you load onto your Windows PC to communicate with the Cassiopeia. The main application is the HPC Explorer, which recreates the Cassiopeia's screen on your PC and allows you to remotely control the Cassiopeia from the Windows desktop on your PC. The CD also contains an updated version of Schedule+ for your desktop, Pocket Internet Explorer and an Internet mail application.

Once you've installed HPC Explorer on your personal computer, transferring files between the Cassiopeia and the PC is a simple matter of dragging files in and out of the HPC Explorer window. Because Pocket Word and Pocket Excel use a different file format than the full-blown versions, a file conversion process occurs automatically during file transfer. File synchronization between Schedule+ on your PC and the PIM modules in the Cassiopeia, on the other hand, is automatically done each time you connect the two units together.

The synchronization utility also creates an archive on your PC in case calamity befalls your Cassiopeia. I pulled the two AA main batteries and lithium backup out of the unit to simulate complete battery failure. When I reinstalled the batteries, and hooked the unit to the PC, the files were restored from a special archive with no particular bother.

Pocket Web browser

I also loaded the optional Pocket Internet Explorer on the Cassiopeia, and am happy to report that setting up my Internet service and logging on took less than five minutes. I inserted a Fujitsu 28.8 PC Card modem, which the Cassiopeia auto-recognized, and after setting up the "make new connection" dial up utility (which is similar to the one found in Windows 95) it was a simple matter of dialing in, and then launching the Web browser.

However be warned that the current generation of PC Card devices will tax the handheld device's two AA batteries severely. The factory installed batteries had only about two hours' use when I first attempted to use the modem, and within five minutes were drained. After loading a fresh set, I managed to use the modem for about five minutes, and the battery meter still read "good."

When you turn the Cassiopeia on after inserting the PC Card modem, you are greeted with a warning dialog, pointing out that the device will be hard on your batteries, and you should use an AC adapter. Unfortunately, the AC adapter is an extra-cost option with the Cassiopeia.

However short battery life is not a problem specific to the Cassiopeia. Other devices that accept a PC Card device—like the Hewlett Packard OmniGo—have an equally hard time running these devices with the built in batteries. Under normal use, the Cassiopeia's batteries are rated to last about 20 hours.

Where are the other applications?

Microsoft had set up a special Windows CE section in its pavilion at Fall Comdex, and invited several palmtop manufacturers and a dozen and a half third party software, peripheral and accessory vendors to participate. Microsoft says that nearly 100 third party vendors have stated they will be creating products for these devices. I noted a couple of handwriting recognition products, wireless data modems (including one from Burnaby B.C. based Infowave), memory card products, and vertical applications such as forms design applications.

You can expect application development

Intel competitors

Continued from page ***95***

Sanders claimed PC-based business is one of the growth areas for AMD and that the figures reflect this. "Revenues from our Computation Products Group (CPG) primarily Microsoft Windows-compatible microprocessors grew from the immediate-prior quarter. Shipments of AMD K5 microprocessors more than doubled to 500 000 units led by sales of the AMD-K5-PR100 microprocessor. With the introduction of AMD-K5 PR133 and AMD K5 PR120 devices the AMD-K5 family now addresses 70 percent of the desktop market," said Sanders.

Sanders admitted, however that revenues from the other parts of AMD's business would not "offset the losses we are incurring in CPG, where revenues are currently insufficient to absorb the substantial fixed costs of maintaining our strategic commitment to the Microsoft Windows-compatible microprocessor market."

AMD also used this timeframe, however, to announce what it has dubbed the "lanSC400" microcontroller designed for mobile applications supporting Microsoft embedded operating systems and development tools. The new chip is supposed to be compatible with MS DOS, Windows 3 1, Windows 3 11, Windows 95 and Windows NT software.

The company says this new microcontroller combines AMD's well-established 486 core with a set of mobile application specific peripherals into a single-chip PC/AT compatible microcontroller (basically providing the guts of a PC on a chip).

At least AMD has Microsoft singing the praises of a chip not designed by Intel. "An increasing number of designers are looking at x86 embedded solutions and we are enthusiastic about AMD's lanSC400 device and its capabilities," offered Ray Kanemori senior manager for Microsoft embedded products. "We believe the new lan product offers an attractive alternative for systems makers who are looking to enable smaller, more powerful dedicated systems."

AMD says the processor is ideally suited for "the emerging generation" of ultra-small point of sale, data collection, internet browser, mobile terminal and smart phone mobile devices. In addition to power management, PC/AT and LCD graphics control features, the microcontroller integrates a number of common peripherals useful for mobile applications. These features include a serial port, parallel port, real-time clock (RTC), a dual PC card controller and a matrix keyboard controller. An IrDA (integrated infrared) feature supports high-speed wireless communications. All features of the lanSC400 microcontroller comply with industry standards.

And on the desktop AMD also announced in October two new "higher performance" members of its AMD-K5 processor family the AMD-K5 PR133 and AMD-K5-PR120 processors. AMD says the new AMD K5 PR133 and the AMD K5 PR120 processors "deliver system performance equal to or better than 133 MHz and 120 MHz Pentiums, respectively based on P Rating tests using the popular Winstone 96 benchmark.

AMD hopes the chips will put them back in the Pentium-class mainstream. "Seventy percent of the desktop PCs sold today are in performance ranges up to PR133," suggests Larry Hollatz, vice president and general manager of AMD's Texas microprocessor division. "These new AMD-K5 family members put AMD solidly back in the mainstream desktop PC market."

The company also pledges that the AMD K5-PR133 and PR120 processors will provide "Socket 7 hardware compatibility" that enables PC manufacturers to take advantage of prevailing fifth generation system designs and infrastructure. This Socket 7 compatibility is supposed to minimize system redesign and development cost and speed time to market.

In addition, AMD is at pains to point out that the AMD K5 processor is licensed by the Microsoft Windows Hardware Quality Labs to carry the Windows95 logo and has received compatibility certification from XXCAL Inc., an independent testing laboratory. The company says further that the AMD K5 processor is not only compatible with the Windows operating system but also with the installed base of x86 software, including Novell Netware and OS/2 Warp operating systems, and more than 60,000 other software packages.

So what differance does all this make?

Well, the most important impact of all this is that Intel still has some credible—if struggling—competition. That means that there can still be systems developed that are not tied to a single family of processors sold from a single Intel price sheet. You will continue to be able to buy non Intel Windows based systems—and get them at highly attractive price/performance points.

And the tantalizing prospect of a business that could grow up around network computer-style systems that require only the ability to run browsers and execute Java code makes the whole market a much different proposition. Now there is absolutely no iron clad guarantee that this will happen, but there are a number of major players with vested interests who will give it a damn good try.

Beyond all the companies mentioned above, there are those with deep pockets and strong commitments to chip technologies—notably Motorola, IBM, Apple, Digital Equipment and Silicon Graphics—who are still committed to chips like the PowerPC, the DEC Alpha and the Silicon Graphics MIPS family.

And the recent announcements by Microsoft that a number of companies other than Intel will be supplying processors for a number of the first Windows CE-based handheld computers expected to hit the market in the next few months should also have a big impact on the future of chip companies. (*Windows CE is a portable version of 32-bit Windows announced by Microsoft this fall. It uses a graphical user interface similar to Windows 95 and a subset of the Win32 API. A number of organizer companies, including Casio, announced CE products at Fall Comdex in November—Ed*)

But all that is yet to come. And until it does, Intel will continue to stay so far out in front that all the competition can do is track its progress in inches per minute while Intel keeps moving at miles per hour. ❑

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Weaving your own Web site: Part XVI

Publicizing your Web site: Part II

BY KEITH SCHENGILI-ROBERTS

In December's "Weaving your own Web site" article we looked at how you could publicize your Web site using traditional methods, contacting other Web masters and setting up reciprocal links, using banner ads, and the pros and cons of "Web awards." But these days, if somebody is looking for a site such as yours, they'll probably start their hunt via Yahoo, Alta Vista, Lycos, or any of the dozens of other popular search engines available. How do you get your listing in a Web search engine, and how do you make it appear prominent when somebody does a search on sites related to your own?

Getting listed

Most search engines allow users to enter new uniform resource locators (URLs) into their database. This process is usually pretty simple: click on a "Submit URL" (or something similar) button within the search engine and type in your URL. Many search engines will take things from there, and send out a "Web crawler" program a few days later to check out and automatically catalog your site. Other Web directories, like Yahoo, ask you to write a brief description of your site, and what category (or categories) you think it belongs in.

When you end the process, the Web search engine will typically check to make sure that a Web site does exist at the URL specified (you did spell everything right, didn't you?) and then the entry is added. In the case of Yahoo, a person will check out your site, determine whether or not it meets the particular search engine's criteria of being a useful site to include, perhaps do some editorializing on your Web site summary, and then, if your site passes the test, add it to its burgeoning database.

It is worthwhile to do some research before submitting a URL. If a search engine uses category listings, check to see which category best fits your Web site. If you find sites similar to your own in a category, you've found the right place to register yours. Do not

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While the process of adding URLs to individual search engines worked well when there were only a few Web search engines available, these days there are dozens of search engines available. While the majority of Web surfers tend to stick with one of the more popular search engines (Yahoo, Lycos, Alta Vista, Excite, Webcrawler, etc.), to draw in as many visitors as possible to your Web site, you want as much coverage as possible. If you target all of the major search engines, you can be sure that you will get some coverage.

There are services designed to partially automate the process of registering your URL with many different search engines. One of the most popular of these is Submit It! (http://www.submit-it.com/), a submission service that enables you to register your URL simultaneously at several search engines. You fill in a single master form, select the search engines to post to, and it takes care of the rest. Like many such services, it now offers professional (i.e. pay for use) services for commercial sites, but it still offers a free service that enables users to register their URL with as many as 16 search engines and directories at once.

As search engines proliferate, many are targeting themselves at niche audiences, so now there are search engines being devoted exclusively to specific types of Web sites, like music (Music Search, http://musicsearch.com/), science fiction (Nebula Search, http://members.gnn.com/[illegible]/nebsearch.html), financial (MoneySearch, http://www.moneysearch.com) and many more. Go to a couple of search engines and type in the keywords "search engine" and a keyword reflecting the topic covered by your Web site. If you find a match, check out the search engine, and get your URL registered there.

HTML search engine tricks

Many of the search engines obtain URLs for their databases by sending out programs known as "Web crawlers" that go out and search for new URLs to add to the database. There is no human intervention—the Web crawler finds new Web pages, retrieves them, searches them for keywords, and then automatically adds them to the database. Knowing how these search engines work can help you bring your Web page to greater prominence within a Web search engine.

Since most Web crawlers end up searching for and storing pages by keywords that appear in the page, it makes sense to ensure that a keyword or keywords appear prominently within a Web page. At the very least, try to include an important keyword as the title of your Web page and within the `<TITLE>` tags.

It has also been found that adding a description for the Web page using the `<META>` tag helps several Web crawlers to properly identify and catalog your Web page. This is not surprising, as one of the original reasons for the creation of the `<META>` tag

Continued on page 117

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Making cents of your money

TCP's annual review
of personal financial software

BY ROD LAMIRAND

In our roundup of personal financial software this year we found there have been a few changes in the market. Both Intuit and Microsoft have brought out new products. The competition to be your personal financial program of choice has continued unabated. The competitors are running full speed ahead with new features and good prices but one has pulled ahead. As well, one of the packages from last year, Simply Money, has changed hands and dropped its price. The new owners have repackaged the program and are offering it on CD-ROM dirt cheap.

Our only truly Canadian entry, CanPlan 96 for Windows, is back with an upgrade to try to capture your dollars. The Internet is making its presence felt in these programs with links to financial Web sites. Online banking, while a reality in the United States is still in the not ready for prime time category in most of Canada. Each developer is throwing in every possible feature and function to persuade you to buy their software.

A lot is riding on the software you buy. As the Internet and home PCs converge with personal banking, someone is going to broker your transactions with the world—and whoever that is could be on to something big.

Think of it this way: the banks are moving more and more to customer control and management of funds. At the same time, many individuals are tracking their finances on their home PC. Credit unions and banks are allowing transactions, such as bill paying, to be performed from the customer's home. Why not combine the two? Make a program like Quicken or Microsoft Money the front end for the financial institution.

Wait. Even better, why not simply leave out the bank? If you can automatically electronically deposit your pay cheque, pay bills and move funds on your home PC, and simply use a credit card, or debit card, to pay for items, why have a bank? Presto: the International Virtual E-bank. Perfect: sell the software, sell the credit card, collect interest, collect transaction fees and best of all—no buildings.

Well, if you don't think Intuit and Microsoft and many others have thought of this, then think again. However, these things turn out in the long run, it is the consumer who is benefiting from this rivalry today. Financial software is mature and feature rich and the competition should see this continue.

This new crop of products is an incremental improvement only and in no way distinguishes itself with any real innovation, but today's financial software is some of the best and most useful software ever written. Read on to find out which program can best help you in making cents of your money.

Money 97

From Microsoft Canada Inc.
Suggested Retail Price: $59.95

Microsoft Money 97 is a refurbishment of the beautiful Microsoft Money released in the fall of '95. Money is Microsoft's competition for Intuit's Quicken. After the failed attempt to buy Intuit, Microsoft is left with only one way to proceed if it wants to own the home finances market. It must build a better program. In this instance, the anti-trust regulations in the United States are working. Intuit was so far ahead in both product features and user base that the sale of Quicken would have left one program dominating the market. As it is, Microsoft has worked very hard to take away Intuit's customers.

First, it built a program based on the same metaphor as Quicken. Then it made it one of the most full-featured and beautiful programs

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ever created for home consumption. Then it gave the software away for about four months in 1995 Now it has increased the feature set to include Internet sites, and a wizard that will automatically translate Quicken files into Money format and it has lowered the cost so that the street price in Canada will be below $50 at some wholesale-style stores Tough to beat.

Microsoft Money 97 is a CD-ROM-based Windows program for Win 95 or NT 4 0 (it does not work on NT 3 51) The minimum hardware for the program is any machine that has a CD-ROM and will run Windows 95, but on anything less than a 486-50 it drags The basic features of the program are as one would expect with account ledgers loan and mortgage amortizing, printing of cheques, portfolio manager, asset tracking, financial calendar with drag and drop and an extensive help system with text-based reference information to help answer many financial questions

As a newer Microsoft program, it uses IntelliSense technology which is Microsoft's way of saying the program tries to guess what you are going to do based on what you have already done Thus, things like autofill and other automated routines work to save you keystrokes. The basic components are good and primarily unchanged from the earlier release

Money 97 now has a built-in Internet launch routine that takes you from the program to Web sites as long as you have your Internet connection set up This feature worked well for us We liked this feature and the related feature—the Money Zone The Money Zone is simply a Web site that the software will take you to There, you will find information about stocks financial articles links to other sites and upgrade or patch information should Microsoft offer it.

There is a simplified online setup for electronic banking that works by entering the routing number from the bottom of your cheque The software then tries to dial a number that will check to see if your institution offers online services We couldn't get the number to work Overall this is a good value and a very good program You can't really go wrong with Money 97

Quicken Deluxe 6 for Windows

From Intuit Inc Canada

Suggested retail price $69 95 (CD-ROM)

Quicken Deluxe is the most recent release of the most popular personal financial program in the world There are more than seven million users worldwide The company has set up a Canadian subsidiary that works hard to make the program fit the needs of Canadians. This is both surprising and not surprising

It is surprising that Intuit has gone to the trouble of altering its program to suit the Canadian market as this market is about the same size as the state of California. It is good to see that the company is truly interested in meeting the needs of its customers and has taken the advice of *The Computer Paper*'s 1994 95 recommendations by removing as much American content and features as possible (Now if only they could get the spelling of cheque right)

On the other hand, is not surprising that they are working so hard. Intuit built itself on an easy, intuitive (hence the name) interface and the practice of leading the market with features in fact many autofill features found today in everything from PIMs (personal information managers) to spreadsheets, were pioneered by Intuit in early releases of Quicken Continuing that tradition Intuit leads the Internet with one of the best financial Web sites the Quicken Financial Network

Quicken is based on the metaphor of a chequebook. This is a visually appealing program with extensive functionality Basic features are as would be expected and similar to those listed above for Microsoft Money As well there is a Debt Reduction Planner, Show Me videos, Internet access, Home Inventory and Ask a Professional. The CD-ROM-based Quicken Deluxe is written for Windows or Macintosh and comes with Bell Charts Mutual Funds Finder, which provides in-depth information for more than 1 300 Canadian mutual funds The program is well integrated with Intuit's very extensive Web site and has one-year limited access to stock quotes from the VSE, TSE, ME.

There is insufficient space to detail the numerous improvements but the software is rich in features Intuit claims that it has 65 percent of the Canadian personal financial market—that may, or may not, be so If it isn't, it soon will be if this release is any indication of future versions. Quicken Deluxe is hands down the best program in this survey

CanPlan Personal Edition for Windows

From Springbank Publishing Co

Suggested retail price $50

Reviewed here last year as the little program that roared, CanPlan 96 Personal Edition for Windows has gone though a few improvements and the company has managed to make the program a good value Now delivered on three floppy diskettes, this Windows 3.x/95 program is a quirky, little Canadian treasure The interface is getting better but it is still an ugly little beast The conventions usually followed by more mature programs are missing For example, your social insurance number can be 123 456 789 but not 123-456-789 And there are no automatic anythings, but as was the case last year the program will give you a very sharp and accurate look at your finances

This is not a cheque printing and account managing program. This is a review your-financial-health program You can perform all the money planning activities you might need. saving for a fixed amount, loans, value of loans in the future, retirement planning, RRSPs—all the information that you might possibly need to calculate your personal assets and liabilities for now and the rest of your life In spite of its gawky feel, I like this truly Canadian, financial barometer. If you like your meat and potatoes without any fancy sauce served on a plain plate CanPlan 96 Personal Edition for Windows is for you

Simply Money

From CD Titles

Suggested retail price under $20

From the category of recycle, reduce, reuse comes the second life of Simply Money Simply Money was reviewed here last year as a $70 program from Computer Associates. The review found the program unique simple and under-powered. Now owned by CD Titles the program has found a new life as an inexpensive little CD-ROM

Deaver Brown president of CD Titles, says he is trying to make "the Simply Money cheque-writing and personal finance program as easy and cheap to use as a solar calculator at $10 to $15"

The Simply Money interface is a wonder of simplicity Lying on a felt tabletop are icons divided into Income, Payee and Accounts categories Along the bottom of the table are icons representing actions. To enter a payment or a deposit, the user simply grabs the appropriate icon and drops it on top of the correct icon The intuitive object-oriented style of Simply Money is extremely easy "If you want a complex program buy Quicken if you want a simple, cheap easy cheque-writing and tax-import product buy Simply Money" says Brown

He is right

Every one a winner

As you can see, there really are no losers here this year For a simple program that is no strain on your wallet, Simply Money can't be beat For a truly Canadian financial health

Continued on page **117**

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Troubled times at Novell

BY GEOF WHEELWRIGHT

There is trouble in the house of Novell. The extent of that trouble became urgently clear during the recent NetWorld/Interop conference in Atlanta when the question on many commentators' lips seemed to be "Just how dead is Novell?" (To which the answer might come: "Novell wouldn't VOOM if you put 40 000 volts through it. It is no more, etc.")

The very fact that such dark humor can be used in talking about the company that virtually built the PC networking market— and announced only this past spring that it enjoyed an enviable $2-billion business in network software and services—is an indication of the company's ills.

No matter how much of the existing market Novell still enjoys for its installed base of NetWare servers, the perception appears to be that Microsoft and Windows NT 4.0 are starting to walk away with the NetWare market, and that Novell is just too slow and self-involved to get its act together in time to let users take advantage of all the current hot issues in the network market.

Novell boosters will tell you that none of this is true, and they have a point. But it's a hard perception to fight, so hard that the Novell board of directors took the extreme step of making a major change in top management at the end of August to try and turn the tide.

What happened to Bob?

On Aug. 28 Novell's board of directors accepted Bob Frankenberg's resignation as chairman, president and chief executive officer (CEO) of Novell, citing the impetus for the decision as "the board's perspective to long-term business objectives, not short-term issues."

In many ways, it was too bad. It was yet another nice guy finishing last—or at least being shown the door. Frankenberg once said in an interview that he knew the attention lavished upon him by the financial and trade press had little to do with him as a person. It was a product of the job and would cease when he quit.

Perhaps it is because he was so completely without ego about such things that the Novell board said it saw "opportunity for new leadership to swiftly and aggressively take advantage of expanding opportunities in the networking marketplace" when it replaced him as chairman of the Novell board with John Young, the high-flying former chairman and CEO of Hewlett-Packard. (Ironically, Young used to be Bob Frankenberg's boss when the latter also worked at HP prior to his all-too-short reign at Novell.)

Meanwhile, Novell supersalesman (and executive vice-president of worldwide sales) Joe Marengi was named president, and now reports to Young. At the time of writing, HP's board was still in search of a new chief executive officer.

Can these guys make a difference?

John Young is the archetypal, old-style computer industry success story. Although he is only likely to be actively involved in the company and overseeing its management until the appointment of a new CEO, he may set a new style for the company.

To get a measure of this 64-year-old industry legend, you have to look at his 34-year career with HP, the last 15 years of which he served as president and CEO (from 1977 to 1992), seeing HP aggressively move into the PC arena and establishing a commanding market share for laser printers and a strong presence in the Unix and networking sectors.

He also saw the company through many

Continued on page 145

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Making sense of your money

Continued from page **115**

program, CanPlan is your product. Great value for a very good program can be found in Microsoft offering, Money 97. And, last but not least, Intuit has once again produced the best financial program ever created with its Quicken Deluxe CD. If we could recommend one thing to these developers, we would say make the online banking in Canada easier and more reliable. If we could recommend one thing to users out there, we would say give this type of software a try. It is full featured, mature and easier than ever to help you make cents of your money. ❑

Contact.

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Weaving your own Web

Continued from page **113**

was cataloging purposes. Use the NAME attribute of the `<META>` tag along with the CONTENT attribute and a brief description, such as in the following example

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```

In general, it has been found that the more often a keyword appears within a Web page, the more prominent a listing it will get within a search engine. When a person searches for a common keyword term, most Web engines place priority on Web pages that contain multiple instances of that keyword. All things being equal, a Web page that uses the word "budgie" 10 times within a single page will appear higher in a user's search for budgie-related Web sites than a Web page that only contains nine instances of the word.

This practice can be taken to extremes—overt repetition of keywords is known as "search engine spamming." If you have ever seen a Web page with a number of keywords either hidden from view in the header of a Web page or worse, visible within the body of a Web page, then you've run across a case of it. This technique is frowned upon, not only because it creates bulkier Web pages that take longer for the user to download, but because Web crawler designers are getting smart, and are changing the characteristics of their crawlers to compensate. While this technique may have led to a top listing within a search engine in the past, spammed pages are often passed over by Web crawlers—the designers have a vested interest in not promoting this technique.

Too many visitors?

Keep in mind that there can be some down sides to creating a very popular Web site. Take the case of a friend of mine who created a Web site that became popular overnight. At the end of the month, he got a whopping bill from his Internet service provider (ISP). It turns out that he was being charged for something he had no direct control over—the total amount of downloads from his Web site. His site made use of a lot of pictures and text, so whenever anybody visited his site, they "downloaded" all of the text and pictures to their systems. He was allotted 100 MB of free downloads from visitors, but was charged per MB for everything above that amount. Luckily he was able to work out something with his ISP regarding his site and he immediately reduced the graphic content of his Web site, but it pays to check with your ISP to see if there are any hidden charges when you create a Web site. ❑

Keith Schengili-Roberts welcomes any comments, suggestions or HTML tips and tricks you may have. You can e-mail him at: kschengili@interlog.com. His book on HTML, The Advanced HTML Companion *is available in bookstores. Previous articles in the series can be found at* The Computer Paper *Web site: http://tcp.ca/*

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Getting organized

A roundup of personal information management software

BY ROD LAMIRAND

PIMs, or personal information managers, have matured in recent years to a point where they offer both the standalone and networked user considerable value. All the major PIM makers are offering new products that have been rewritten since the release of Windows 95 and take advantage of that fact.

Lotus is really moving forward with Organizer 97 and has big plans to become the de facto standard for corporate and personal organizers. Meanwhile Microsoft is moving forward with big plans of its own that see its new offering populating the land, as ubiquitous as Microsoft Office.

All the organizers have a number of improvements, many of which are common to the group as a whole. They all have the basic components, an address book, a calendar and a to-do list, but they all also offer increased ease and greater ability to transfer between different data types.

Most have tried, in one way or another, to include e-mail and Web page addresses. Most have decided to use Windows 95's built in TAPI (telephone application programming interface) for telephone dialing and time tracking. Common in these new programs is the ability to select a contact and have the program place the contact's information in the header of a letter saving you the bother of entering name and company data that is already in your PIM. Most programs will also print output for three or four different brands of paper-based organizers.

Another development is the push by various developers for a common data exchange type to ease the sharing of different databases between products and on the Internet. This new agreement could do away with the dreaded process of converting data to a comma delimited text file before importing it to a new database, which would be a relief.

Lastly, the market is moving toward a new protocol whereby electronic business cards are easily passed between individuals via e-mail or any other medium. Thus your PIM would automatically enter all the electronic business card information into your database of contacts without the need for you to type anything if you decided you wanted the information.

Interestingly, there seems to be a fight brewing in this area between Microsoft and almost everyone else. A consortium of developers, excluding the software giant, has proposed an electronic business card, but it seems that the same feature offered in the new Microsoft Office 97 will not adhere to the proposal. It is tough to say who will cave in but, in the meantime, it is we the consumers who will live with the headaches.

Evaluating PIMs can be a tough job because different people prefer various styles and features and have different skills. However, here are a few criteria to consider:

- **Ease of use.** Is the interface easy to learn? Is the online help helpful?
- **Features.** Will the PIM do all that you want it to, now and in the future? Can the PIM automatically dial calls? Does the product provide caller tracking so that you can keep track of conversations?
- **Internet features.** Does the PIM allow you to record Web site and e-mail information? Does the PIM launch popular browser applications? Does the PIM work with popular e-mail packages?
- **Search and sort functions.** Is it able to search by entry type, priority, category, etc.? Can it search by word across any and all fields?

Continued on page **120**

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Getting organized

Continued from page **118**

- **Workgroup/network features** You may be a single user currently but perhaps you'll be in a networked environment in the future Does the PIM allow for group scheduling, selective sharing of data, notes?
- **Printing:** Many PIM users also use paper-based systems making good printing capabilities essential for integrating the two. Will it print pages that fit your paper organizer system? Will it look the way you want, report formatting, font options preview, double-sided printing, color? These are some things to consider

These programs are full of ease-of use conventions, productivity enhancements, automated shortcut routines and every other nifty little trick their makers could think up They are better looking, smarter and more cooperative than their forefathers. But for all the spit, polish and promise there is one elemental factor that might give you pause to consider Is a PIM for you? To be more succinct will the value of organizing your information exceed the time cost?

The short answer is Yes! One of the problems with personal software, whether it is an information manager or a financial program, is that well-intentioned consumers purchase the software and then feel defeated when they don't keep perfect records. This is unnecessary The programs reviewed below have so much functionality that there is something for every user If you only use the address book or the journal that is fine The more fastidious can utilize every feature the lackadaisical may enter only a first name and phone number You may not really need your drycleaner's postal code

PIMs have made great strides and come full of great little features. The market is crowded and that is good for consumers. Each company is vying for shelf space, which makes products richer and the prices leaner Look for this trend to continue as Microsoft ups the ante with its new all-in-one e-mail/PIM/fax program Outlook and the new features in Lotus Organizer, which push the PIM envelope Find below reviews of Any Time Deluxe from Individual Software Day-Timer Organizer 2 1 from Day Timer Technologies, the makers of Day Timer paper based organizers, SideKick 95 from Starfish Software, Lotus Organizer 97 and a short peek at how Microsoft has overhauled their PIM Schedule+

Any Time Deluxe

From Individual Software Inc
Suggested retail price $45 95

Any Time Deluxe is a Windows 3.x or 95 program for standalone use or use in a small network The product can be licensed in a network pack of three five or 10 Both a CD-ROM and diskettes are included in the package

As with most of the products here, Any Time uses the notebook organizer metaphor and will print to a number of desktop organizers as well as an infinite number of customizable calendar styles The program is easy to use and fairly intuitive

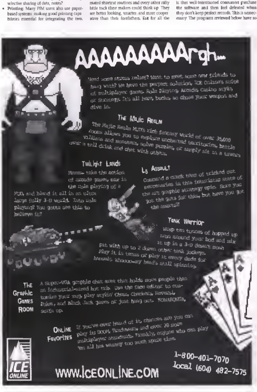
The features are good but not extensive One feature I really liked was the Drag Net. Drag Net is an icon at the top of the calendar views that sits waiting for you to drop something on it The information is then stored there while you leaf through the weeks or months to find the day or note pad that you want to place the data on Now just grab the Drag Net icon and drop the information wherever you please In essence this is the same as highlighting and copying, selecting and pasting, however it is a good example of the kind of natural ease-of-use feature of the program

Any Time Deluxe has a long list of features; however in the big picture they are the expected rather than the innovative This is a good program with a pleasant interface. Because of its excellent pricing it is a good value I recommend it for new users but not for experienced workers with high expectations and it is not a good choice for businesses.

Day Timer Organizer 2.1

From Day-Timer Technologies
Suggested Retail Price $89 95

Day Timer Organizer is a powerful flexible, easy-to-use PIM that is tightly integrated with the company's desktop paper based organizers (The company sent along a binder for evaluation) Day Timer



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Tank Warrior

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The Graphic Games Room

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Online Favorites

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Technologies Inc. introduced its product in 1994 and it is one of the bestselling PIMs on the market. The program is available for Windows and Macintosh and manages schedules, to-do lists, addresses, phone calls, notes, and expenses.

This new version has Web and e-mail launchers, customizable fields, full text search, linked phone log, expense tracking, entry linking and free form notes. A selection of binders and computer forms designed to work with Day Timer Organizer is available to create a complete time management system.

This is a very good program that I really liked. The developers have incorporated changes to reflect the growing use of the Internet. Day Timer automatically launches a user's browser (Netscape Navigator or Microsoft Explorer) to go to any Web site recorded in a contact record or notes field. Similarly, for any e-mail address entered, Day Timer will launch an e-mail package (any VIM or MAPI system on Windows, Claris e-mailer or Eudora on Macintosh) and pre-address a message.

One of the best features is the quick fill data entry. Originally brought to the consumer market by Intuit in the Quicken software, quick fill lets the software guess what you are going to type based on previous entries. It works quite well and is a real bonus here. The company has 50 years of time-management experience with paper based systems and it shows. Day Timer claims 85 percent of those who use PIMs in their daily lives also carry paper based planners. I am not sure if this is true, however I am sure that the combined use of the program and their notebook organizers is a real joy.

In some programs, the complexity of printing the information to a two-sided odd sized sheet is confusing, but the document management wizard in Day Timer makes setup straightforward. The leather-covered day book was a real joy to work with.

The product can also be purchased as Day Timer Organizer for Workgroups which is a strong group-enabled scheduler/PIM. The software can be purchased in multi-user packs which may be combined to support up to 720 users per database. Day Timer Organizer for Workgroups runs on Novell Netware (v2.15 or higher), Netware Lite, Banyan, IBM, Microsoft, 3Com, LANtastic, Windows for Workgroups, other fully NETBIOS compatible networks, and AppleTalk. Day Timer Organizer for Workgroups reads the Novell Bindery and Banyan's StreetTalk. Day Timer Organizer is one of the top three PIMs on the market and an excellent choice for single or group work.

SideKick 95

From: StarFish Software

Suggested retail price: $49.95

SideKick 95 is much like some of the other PIMs reviewed here except that the metaphor for the program is a desktop rather than a paper based organizer. The look and feel of the program is very nice. ➤

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Visually, there are a number of pleasant details—for example each month the calendar displays a small unobtrusive banner that nicely evokes the feeling of the season As well the default color schemes are aesthetically pleasing as well as perfect for distinguishing various types of information Daily, weekly and monthly views are available as with most PIMs There is also the ability to drag and drop some items from one area to another, although this feature is not as universal as in other programs

SideKick 95 was one of the few programs that imported Microsoft card files and Schedule+ files perfectly Also nice SideKick has a world view that not only lists various definable time clocks but also shows which area of the surface of the globe is currently in sunlight This little feature is a nifty way to see whether the rest of the planet is about to get up or go to bed

As one would expect the program has a phone dialer recurring events support for Microsoft Exchange, password protection and a slew of other features. Unfortunately the overall effect falls a little short It is not possible to drag and drop appointments in the monthly view The program places icons all over the desktop which seems unnecessary

This is a program that is pretty and easy to get up and running, but the depth of features and the ease of navigation are not there as they are for the other programs As an introduction to the PIM world or for a casual user this is a fun little program

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Lotus Organizer 97 for Windows 95/NT

From Lotus Development Corp
Suggested Retail Price $99 95

Just released a few months before Christmas, Lotus Organizer 97 is a full fledged information manager but it is also a lot more From the standpoint of a standalone application it is a very complete and robust program that will work very well by itself or as part of Lotus SmartSuite Considering the space limitations here let me dispense with listing the program's features The basic components that are found in most of these programs are also found here

The features that set the program above the rest are as follows

- **The great linking ability** As an OLE 2.0 32 bit program for either Win 3 x or NT it is possible to do almost all your work from inside of the PIM
- **True drag and drop** Things that you would expect to be drag and drop all are The interface is good and the navigation tools are excellent
- **Other Organizer 97 features include** A new daily calendar view with appointments displayed as blocks of time in a graphical format rollover of planned calls until completed and rich text formatting There are other interesting functions such as launching your Internet browser or e-mail program, but there are two very exciting things that really presage the future of PIMs a common front end for both personal and corporate PIMs and Web Calendar on the road Internet access to your PIM data

Organizer is one of the most popular PIMs on the market and well regarded as a personal productivity product. Lotus Notes is the number one corporate communications program and now Lotus intends Organizer to be the front end for Notes This will be good news to both Notes and Organizer users and a serious threat to Microsoft s plans to dominate the corporate LANs of the world. Equally compelling is the new Web Calendar Organizer 97 Web Calendar a Web server application that enables Organizer 97 files to be accessed through industry leading Web browsers is available as a free download from Lotus Web site (see contact)

Organizer 97 Web Calendar will allow Organizer 97 users to access, share and manage schedules and tasks remotely over the Internet or on corporate intranets. "Organizer 97 Web Calendar extends the power of the Organizer 97 PIM, allowing users to remotely access their calendars as well as share their schedules with co-workers clients and suppliers via the Web or corporate intranets " says Nina McIntyre general manager Lotus Organizer

Organizer 97 Web Calendar is a common gateway interface (CGI) application that is installed onto a Web server. Once installed, end users can save their Organizer 97 (OR3) files onto a network file server or a Web server Using Netscape Navigator 3 0 or Microsoft Internet Explorer 3 0 end users can then connect to a home page and access their Organizer information by specifying a file name and entering their user-defined password. Organizer 97 Web Calendar then reads and displays the information stored in the Organizer file as a standard Web page. Users also have the ability to post Organizer files that can be accessed and shared by multiple users. Organizer 97 is a great choice, whether for personal or business use.

Schedule+

From Microsoft Canada Inc.

Suggested retail price: Part of Microsoft Office 95

The original Schedule+ is a puny little PIM that I have used since it hit the market at the release of Windows 95. It is a plain Jane, vanilla program that is functionally prosaic and visually dull. Microsoft has replaced it. But they have done more than build a new PIM: they have re-invented the PIM and combined it with their communications program Microsoft Exchange. At the time of writing, I do not have a copy of the product and therefore there is no review. However, having seen a detailed demonstration of the product, I will mention a few of its features and comment on some of the developments in this area.

Microsoft's new information/communication program is called Outlook and it will be released in conjunction with Microsoft Office 97 or as a standalone application—it should be available as you read this. The demo was impressive. By combining your e-mail, fax, Internet browsing and letter writing with your addresses, phone numbers, calendar appointments and to-do list, Microsoft has created a one-stop work centre for the organization and tracking of all communications.

The program is very object-oriented and will allow for dragging almost any data onto any other. There are neat little enhancements such as the ability to schedule a meeting for "The day after tomorrow," "Two weeks from today," or even "Three weeks before Christmas" and the software will enter the correct date. I'm not kidding, type in "meet Bob S. for lunch tomorrow" and the luncheon is entered in your calendar!

Another development is the move toward the Internet Explorer style interface. The new Office applications have a cleaner toolbar look that is consistent with the toolbars in Internet Explorer 3 and the beta of 4. There are a number of other new features that take advantage of Microsoft's knowledge of its own operating system, but you will have to wait for another issue for a full evaluation.

Of interest is the degree to which the Internet is built into the product. Microsoft clearly expects both private and business users to have a continuous online connection.

Along these same lines is the Microsoft business card protocol. With the new electronic business card, updating and maintaining a database of contacts could be immeasurably easier. As mentioned above the problem lies with finding an industry wide, open format for these cards. On the one hand is a specification announced by Versit, a subsidiary of IBM and Siemens, as well as Lucent Technologies, with the support of some 50 companies, including Novell, Lotus, AT&T, Oracle, HP, IrDA and Netscape, to name a few. On the other hand, Microsoft, which practically owns the business-suite market. Either way, PIMs and contact managers are moving toward standardized data formats and that in itself will be good news for the public.

Continued on page 127

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Corel's WordPerfect way

BY GEOF WHEELWRIGHT

It's been nine months since Canadian software challenger Corel Corporation took over the stewardship of the WordPerfect family of office productivity applications. Many longtime WordPerfect users are beginning to ask if they are more confident about the future of their favorite word-processing product than they were a year ago.

For most users the answer is probably going to be "Yes." Corel has really brought the product back from the brink of what looked like extinction late last year when Novell began shopping it around in a belated move to gain more "focus" on its core networking software business.

Since then, Corel has successfully rolled out a competent and well-received Windows 95 version of the Corel WordPerfect Office Suite and articulated a credible strategy for the future of the WordPerfect product family

Recent history

Strong retail sales in the months immediately following the release of WordPerfect Office 7.0 also gave the company a few things to gloat about over the summer. The company said it was enthusiastic about PC Data figures for the summer that indicated unit sales of Corel WordPerfect Suite represented approximately 50 per cent of the retail office suite market for the months of June and July

Continued on page **126**

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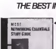

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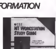

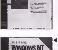

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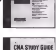

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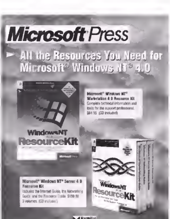

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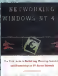
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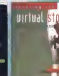

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Corel's WordPerfect way

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Those figures were not lost on Microsoft vice-president Pete Higgins whose job it is to oversee the Microsoft Office suite. Higgins says that while Corel has done well with WordPerfect since buying the company the boost in sales is little more than WordPerfect has traditionally gained from the issue of a new release of the product, but since WordPerfect sales are all now in the suite configuration the sales that typically would have been spread over the word processing and suite sales were all combined into an impressive summer market share for Corel.

Higgins also says Corel hasn't made any significant dent in corporate sales of suite products where Microsoft continues to dominate with Office for Windows 95 and has great hopes for its upcoming Office 97.

Corel also did not do itself any favors with the problems it had in shipping WordPerfect Office. In mid September the company stated that "as a result of a combination of factors" it had experienced delays in shipping copies of Corel Office Professional 7 ordered in the third quarter of fiscal 1996. The amount of product ordered but not shipped (and therefore not included in Corel's revenue for the quarter) was approximately $15 million.

"We focus on shipping the highest quality product with the greatest functionality possible. As a result, delays can be encountered in engineering as every effort is made to include the latest functionality and to eliminate all significant bugs prior to releasing a product to manufacturing. As well the normal pattern of sales orders in the industry results in a substantial weighting of orders to the end of a quarter," explained Corel chief executive officer and president Michael Cowpland.

"Being a multi-product company, it is frequently difficult to project accurately which particular products will be ordered in any particular quarter where there are no new releases. All of these factors have an impact on the production scheduling. These difficulties are attributable to our continuing integration of the new products acquired by the company and all our systems and programs are under ongoing review to address and correct any deficiencies in these areas."

Gunning for the corporate market

One thing Corel expects to do more often in the near future is attract corporate customers for its products. In late August it unveiled a strategy to give customers the choice between two corporate licensing options.

According to Corel, customers may choose to license the product only or they may choose what the company calls the Corel Network Solution (which is basically the product plus a GroupWise Client Licence).

Corel says the Network Solution will enhance its corporate customer's office communications by providing information sharing, internal/external e-mail and scheduling capabilities as well as the ability to assign tasks, write notes and keep track of phone messages.

"This value-added approach provides corporate customers with the client licence at a reasonable price and makes it possible for them to benefit from an increase in productivity as they use the scheduling and messaging capabilities of GroupWise in their offices," says Cowpland.

The Corel Network Solution option applies to Corel's business suites, Corel WordPerfect Suite and Corel Office Professional, which are available for purchase through Corel's Corporate Licensing Program. This offer is valid for any number of users in Corel's Choice or Universal licensing programs. The GroupWise 4.1 Client Licence will no longer be included in retail copies of Corel Office Professional 7 and Corel Office Professional 3.1—which is probably no great loss as it isn't a hugely compelling application for the average home user.

Corel brews a Java version

One of the most exciting developments so far in Corel's tenure with WordPerfect has been the emergence of a plan to offer WordPerfect Office for use with industry standard World Wide Web browsers that can handle Java code. In May the company unveiled this scheme to create "a suite of integrated office productivity applications" written for Java.

Corel promised that the suite would include Java versions of applications based on Corel WordPerfect, Corel Quattro Pro and other productivity applications all integrated within a new graphical user interface (GUI) framework. It pledged that this new office suite would exploit the technological experience gained by Corel from Corel WordPerfect Suite as well as leverage the advantages of the Java platform, offering cross platform functionality based on component architecture that is delivered online.

"Corel has been quick to embrace Java technology as a key in the company's Internet strategy and we intend to deliver a continuous supply of software products supporting this language," enthused Cowpland. "Productivity applications based on Java technology could soon overtake Windows in volume."

The plan was for the Java-based suite to be implemented as a series of Java classes which could allow it to be freely extensible. Additional functionality could then be downloaded as required by the user and modular architecture does account for a small footprint.

Around the same time Corel also introduced Corel Barista, what it called "a core technology" that it promised would allow users of Corel Office Professional's WordPerfect 7 and Corel Ventura 7 to create documents based entirely on the Java platform without any programming requirements.

And by mid-October Corel was making the first public trial of Corel Office for Java by offering it for use at the Corel Web site, making it the first major office suite to be written entirely in the Java programming language.

Dubbed Corel Office for Java, Corel claims that it will "let you create spectacular office documents that are immediately publishable to your local printer, your Intranet or the Internet" without conversion or reformatting.

"Thanks to Java's platform independence, robust architecture and object-oriented programming, Corel Office for Java is the first application suite that can provide a workgroup environment unlike any other," trumpeted the company in its announcement. "No more worrying about formats, standards, or operating systems—just portable documents that can be shared across multiple platforms in any computing environment."

Well almost. At least the first beta version of this product is not completely portable particularly if you use an older browser. In the preamble to the Corel Office for Java site, the company offers some warnings and caveats about what to expect— warnings that make it clear Corel is far from actually finishing this product

"This preview provides you with a limited feature set to give you an idea of what we envision for the final version. Because you are previewing a product that is still in its development stages, you can expect to see Corel Office for Java change significantly over time. The feature set will improve, the interface may change, and Corel Office for Java will become more powerful," Corel warns. "Microsoft will be releasing an update to Microsoft Internet Explorer that will fully support Corel Office for Java. Until then, do not use MSIE Version 3.0 as it may cause your system to hang. Similarly, do not use Netscape Navigator 2.0x. For best results use Netscape Navigator 3.0 or JavaSoft's HotJava Browser."

(And indeed our preliminary tests with Internet Explorer 3.1 have been successful —Ed)

Bring back the Mac

Another laudable development during Corel's time at the WordPerfect helm has been the release of a long overdue update to the Macintosh version of WordPerfect, something longtime Mac WordPerfect users may have started to give up on during the dying days of Novell's ownership of the products.

In August, Corel announced the updated version of Corel WordPerfect 3.5 for Macintosh and Power Macintosh. Known as Corel WordPerfect 3.5, it was actually an updated version of WordPerfect 3.5 previously shipped by Novell.

"Corel is excited about the business prospects we see for supporting the Macintosh platform. We think the Mac will play a major role in our future," said Cowpland, telling Mac users what they clearly want to hear. "WordPerfect for Macintosh has traditionally given users greater choice and flexibility in utilizing new Apple technologies and Corel will continue to be the industry leader in word processing innovation."

The new Corel package includes a collection of more than 150 TrueType fonts, 5,400 clipart images, 187 textures, 67 sounds and 200 stock photos. For managing new fonts and sounds, MasterJuggler 2.0 Pro, a font, sound and desk accessory utility, is also provided. Spanish, French and German language tools, including a spell checker and thesaurus (previously sold separately) are now also included in the new package.

Corel says that for helping users put the Internet to work, it has included Netscape Navigator version 2.02. Updated hypertext markup language (HTML) features include an HTML button bar and macros for creating custom HTML forms and borders. Also, the HTML export now converts PICT images to JPEG format for use on the World Wide Web.

Corel WordPerfect 3.5 easily converts many popular document types, including Microsoft Word Versions 4 through 6, RTF (rich text format) and Corel WordPerfect 7 for Windows 95. A non-WordPerfect document can be opened directly from the desktop into WordPerfect via support for Macintosh Easy Open. Additional document types can be converted through support for XTND and MacLink Plus conversion filters.

A way ahead

So while Corel may not have re-established WordPerfect to the dizzying heights of success it once enjoyed, it is certainly a better-supported and healthier option [illegible] word processing users than it [illegible] hands of Novell.

Users can now buy this product secure in the knowledge that it not only has a future but also one that is being strongly supported by good research and development and strong links to the hottest trend on the planet—that of Internet and World Wide Web integration. ❑

Contact: Corel Corp. Web site: http://www.corel.ca

Getting organized

*Continued from page **123***

And the winners are...

It is difficult to pick a winner from these products because they are all so good, but if this reviewer had to give a recommendation, it would have to be for Lotus Organizer 97 as the best all-round product, followed closely by Day Timer Deluxe as a single user product. ❑

Contact:

Day Timer Technologies, 300-90 Matheson Blvd. W., Mississauga, ON L5R 3R3

Individual Software, 1-5870 Stoneridge Dr., CA 94588

Lotus Development Corp., 55 Cambridge Parkway, Cambridge, MA 02142. Tel: 800-GO-LOTUS (in Canada). Web site: www.lotus.com/organizer

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Monty Python's gloriously silly CD ROM

BY KEITH SCHENGILI-ROBERTS

Monty Python and the Quest for the Holy Grail CD-ROM
Manufacturer: 7th Level
System requirements: 486 33MHz or greater, 8 MB RAM Windows running in 256 colors or greater mouse CD ROM drive MPC-compatible sound card and amplified speakers. DOS 3 3 with Windows 3 1 or Windows 95 (Mac OS version available soon)
Estimated street price: $80

Hark! From over the crest of a foggy hill you hear a horse's hooves pound the earth as he carries a mighty medieval warrior slowly into view. No wait a moment, as the mist clears it appears to be a man wearing a crown prancing about while another man clops a pair of coconut shells together. Hmm, this can only mean another CD-ROM adventure from the Monty Python gang

Go on a gloriously silly quest for the holy grail in 7th Level's new Monty Python and the Quest for the Holy Grail CD-ROM and face countless unimaginable dangers (well, not that unimaginable if you've seen the movie) as you sit in a safe comfy chair in front of your computer.

The Quest for the Holy Grail is something of a sequel to 7th Level's previous Python release, Monty Python's Complete Waste of Time, but whereas there was no real goal to strive for and overcome in Waste of Time in the Quest for the Holy Grail you are sent on a quest by God to find you know what. Based largely on scenes from the movie of the same name this CD-ROM is a good excuse for the remaining members of the Python team to get together again and come up with some new high-calibre silliness.

Ride with Arthur and his trusty servant Patsy, and round up Lancelot Galahad, and all of the other knights of the Round Table whose names nobody can remember. There's plenty of comedy and games to play in between all of the puzzles you have to solve, the prime puzzle being, what exactly do you have to do to get the grail and win the game? While you try to figure that out you can play various silly games like Drop Dead (a gruesome version of Tetris) or Burn the Witch (a Simon-like memory game). One of the best aspects of the game is that when you re-visit a scene, you can expect something new to happen—it is not just the same old stuff over and over again

Clicking around various game scenes reveals clues and interesting comedic sidelines many of them new. Read the Black Knight's secret diary, listen to a poor cow's sorry tale or listen to dialogue originally chopped from the Knights of Ni scene. Those who are truly hardy and complete the quest are rewarded with the King Brian the Wild scene an animated re-creation of a scene cut from the original film.

This game is terrific and lots of fun but it almost requires that you know the movie and enjoy Monty Python to get anything out of it. Anybody not familiar with Monty Python or the movie will be utterly lost in this game, and will probably lose interest quickly However, it is the perfect game for the committed Python fan.

You too can enjoy foul pestilence, rude Frenchmen, and many wonderful ways to suffer a vile painful death when you become a player in Monty Python and the Quest for the Holy Grail CD-ROM ❑

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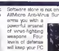

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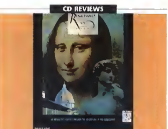

An exhaustive look at Renaissance art and life

Wealth of information makes up for difficult navigation

BY ROSS MACDONALD

The Renaissance of Florence
From Philips Media Inc
Estimated price: US$54.98

Right off the top I should mention that The Renaissance of Florence lacks the one thing we all love about CD-ROM movement. Though the box fleetingly mentions video "With its spellbinding story high resolution imagery and video the Renaissance of Florence provides and exceptional experience." I quite simply couldn't find any video anywhere on the disc—though I must admit I didn't have enough time to spend the hours required to get through all of the contents.

However I should qualify kicking this off with that criticism by also mentioning that this is a great disc regardless. The other boasts cited above (from the box) are not overstated. The narrative is absolutely comprehensive to the point of explaining the evolution of the Renaissance in its historic and geographic context as well as clarifying the art, lifestyle and major figures that greatly contributed to making the world as we know it today. And if that isn't enough, all the stories are heavily illustrated with those promised high-resolution photographs of Florence and of various art works and maps of the time.

Specific topics covered equally well include history painting sculpture and architecture as well as the histories of popes, the Medici and even the role of women during that evolutionary period.

But it's art that takes centre stage here constructing what seems like a complete course on the Renaissance in a manner that just about everyone, from dilettante to art historian can appreciate. And thrown in for good measure, there's an extensive hypertext database included that covers all the most salient topics in printable text.

Though somewhat interactive you have only limited control for bouncing around within the material. The interface is artistically set up like a Florentine piazza from which you click on one of three main categories, which, once selected, break down into varying numbers of sub-categories. The limits imposed by this structure grow in prominence however when you're trying to find something specific.

I, for example wanted to see some of that video I'd read about on the box (assuming it actually exists). But there was no toggle for a media list or directory so I never found it and, outside of the database, it was equally difficult to zoom in on any particular art work building or person.

On the other hand if you can afford the time this disc is so pleasantly produced that I found it best to just choose the "play all" option offered in the main sections and sit back to enjoy the pictures, narration and period music that run along together in multimedia slide show fashion.

The box tells me there are 600 illustrations here and two narrators offering alternative "tours" through the material (one led by 16th century painter Vasari and the other by a modern art critic) along with original digital recordings of 15th and early 16th century music played on authentic instruments. I found some of this but not all. What I did experience though made me want to return for the rest.

A most definite buy ❑

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Cyber romance breaks no new ground

BY KEITH SCHENGILI ROBERTS

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Pilot device now works with Macs

BY PATRICK MCKENNA

MOUNTAIN VIEW Calif (NB)—After debuting Pilot a new handheld computing device at Demo 96 in January US Robotics witnessed a successful product launch of a Windows version of the unit

And now with a Macintosh Connectivity Pack users can have the same device exchange information with Macintosh computers

Pilot ships with a suite of personal information management (PIM) software including a date book address book to-do list calculator and note-taking applications Companion desktop PIM connectivity software and a desktop cradle are also included for a total price of US$249

A spokesperson for US Robotics said "We have been looking forward to opening the Pilot market to the Macintosh community The success of the Windows side has drawn a lot of interest from Mac users, and now we can offer them the same features"

Asked if entry into the Macintosh market would be hampered by Apple's Message Pad commonly referred to as the Newton the spokesperson commented "These are two very different products and we think they appeal to different users Our unit is much smaller in size and in a different price range"

Pilot is also different in size and less expensive than the newly introduced Windows CE handheld personal computers (HPCs) which debuted at the recent Fall Comdex

HPCs sell for approximately US$500 and options for some models can increase the price considerably

The US Robotics unit is based on the Palm Operating System (Palm OS) a handheld computer operating system platform featuring low power small form factor devices to integrate seamlessly with desktop personal computers

The new Macintosh connectivity pack, which includes desktop software and a serial port connector retails for US$14 95 and is available immediately ❑

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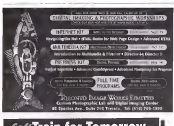

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Sharing data between applications

Windows-based software eases the process

BY KIRSTEN SMESTAD

On the surface Windows-based software applications are getting progressively simpler to use The consistent menu commands and icons on the formatting toolbars make learning an application's basic features quick and easy The downside of today's applications is that so many of their capabilities are never used, because learning beyond the basic features is not quite so easy Often, the full capability of a program is never understood One frequently unexplored feature of Windows applications is the built-in ability to share information between applications Sound like a complicated process? Well, let's start with the basics and work from there.

The Edit menu is a feature of all Windows applications and is commonly used to move and copy data within a single document It is not well understood that almost any type of data (text, numerical or graphical) can also be transferred to a different application

For example say you have a company logo created in CorelDRAW that you want to use in a letterhead created in Microsoft Word Start up the Corel program, open the file that contains the logo and use the Edit menu to copy Then open up Word and use the Edit menu to paste the logo into Word Transferring clipart or other graphic objects from one application to another is relatively simple as the object format doesn't change WordPerfect's clipart of a dragon will always be a picture of a dragon no matter where you paste it

Sharing text and numerical data across different categories of applications, such as a spreadsheet and word processor requires a bit more knowledge What is difficult to understand is how the receiving application will work with the information. For those readers who have used both a spreadsheet and word processor take note that a spreadsheet will paste into a word processor as a table and any of the table commands can be applied When transferring data in the other direction, from word processor to spreadsheet the data must first be placed in table format, or separated into columns using tabs

For example when copying a table created in Microsoft Word to Excel, the table rows and columns are recreated in the spreadsheet If tabs are used to separate the columns of data in Word, Excel determines the columns by each depressing of the tab key

Scraps is a new feature built into Windows 95 and Windows 95 applications Instead of using the Edit menu to copy and paste information a scrap can be created by selecting the desired text or graphic and dragging it to the desktop (the application in use cannot be maximized to full screen a piece of the desktop must be visible in the background). A separate scrap file is created on the desktop which can be dragged (copied) into a new document.

The more technical stuff

When an item is selected and cut or copied using the Edit menu it becomes a separate object and is placed on the Windows clipboard The clipboard is a utility that acts as a temporary storage area You can see the contents of the clipboard by opening the Clipboard Viewer located in the Main Group in Windows 3.x and in the Accessories group in Windows 95

The object on the clipboard is placed into a document by using the Paste command. There is no time limit or specific order in which an object on the clipboard has to be accessed However, only one object can be in the clipboard at a time An object remains on the clipboard until something else is cut or copied to the clipboard or until the Windows program is shut down

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For Windows 95 users, the difference between using the clipboard and a scrap is that a clipboard object resides in temporary memory (unless it is actually saved using the Clipboard Viewer) and a scrap object is immediately saved as a file on the hard drive

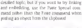
Note for Windows 95 users
Depending on which Accessories options are selected when Windows 95 is installed, the Clipboard Viewer may or may not be accessible If the Clipboard Viewer is not visible under the Accessories group It can be added using the Windows Setup feature located under the Add/Remove program icon in the Control Panel

OLE
The technical term for sharing information between applications is object linking and embedding (OLE) This is standard in Windows and Windows applications since the advent of Windows 3 1

However, OLE is far more sophisticated than just providing the ability to copy objects from one application to another. Part of the essence of OLE is the ability to link objects together so that when you update the information in the file that contains the original (or source) data the receiving (or container) file will also be updated Alternatively you can embed objects from one application into another.

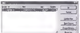
Unlike linking information which places only a representation of the source data in the container file (there is a dispute in the literature on whether the appropriate terms are source/container or client/server), embedding an object places all the information necessary to edit the object in the container file

When objects are linked changes to data in the source file will automatically be updated in the container file If an object is embedded double clicking on the object will allow you to edit it using the actual application it was created in As you can see this is quite a detailed topic, but if you want to try linking and embedding, use the Paste Special command rather than the Paste command when pasting an object from the clipboard



If you create a graph from some financial data using Quattro Pro and want to include it in a report written in WordPerfect (any of the major spreadsheet or word processing applications can be applied here) linking the data using the Paste Special command when placing the clipboard object into WordPerfect ensures the graph remains current when you make changes to the original

When an object is linked to a source file, the Links command under the Edit menu is available to control whether you want to manually or automatically update the linked information every time the source is changed



If you have to transfer the report to another co-worker to continue editing, you need to transfer both the container and source files If you embed the graph into the report also using the Paste Special command just don't select the Links option You create a much larger file but all the information can be transported as one unit.

This article illustrates some ways you can use the Edit menu to transfer data between Windows-based applications. When you transfer information using the clipboard the object linking and embedding capability of Windows is being utilized OLE is a very powerful feature as it allows the user to work beyond the limitations of a particular application

OLE is evolving and for this reason not all Windows applications share information with the same degree of success For example problems may occur when trying to copy information between newer and older applications If you want to test two applications for OLE compatibility try copying objects from one to the other You do not have to understand the technical details of OLE to take advantage of its capabilities however.

You can look up the topic in the Help menu of the particular applications you are using and refer to the section on object linking and embedding in just about any book about Windows. For a hands-on practical guide on how to share information between applications, check out *OLE for Dummies*, by John Mueller and Wallace Wang ❑

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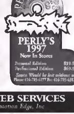

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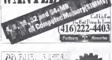

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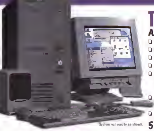

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ATTENTION USER GROUPS: Send in your listing, maximum 70 characters, for the February issue by Friday, December 27, 1996. Submissions can be in print only in the local edition. *The Computer Paper* reserves the right not to print submissions which are deemed unsuitable.

CAMBRIDGE CLONE CLUB meets every 3rd Wednesday evening, 1111 Langs Circle, Cambridge ON, N3H 5B6 or e-mail [illegible]

CLUB MAC meets second Tuesday of each month at George Brown College's Casa Loma campus, 160 Kendal Ave, Toronto, in the auditorium @ 7 p.m. Call the 24 hour info line at (416) 462-1708 or the FirstClass BBS at (416) 462-2082

COMPUTER TRAINERS NETWORK meets Thursday, January 9th, CBC Bldg, 25 John St. Call (416) 781-4185

DURHAM PC USER'S CLUB meets 2nd Thursday of each month, 7:30pm CAW Local 222 Hall, 1425 Phillip Murray Ave., Oshawa. Free. Call (905) 723-3179 or (905) 623-2787

H.U.G. (Hamilton PC Users Group) IBM and PC clone users meet on the last Monday of each month in the auditorium of the Hamilton Spectator, 44 Frid Street at 7:00pm. For further info contact Jim Remme (905) 538-0771 or E-mail at jim.remme@freenet.hamilton.on.ca

IRMAC (Information Resource Management Association of Canada) offers meetings on issues concerning Information Resource Planning, Data Warehouses, CASE, etc. http://www.io.org/~irmac or via irmac@io.org

PAF Users Group mtg. Saturday, January 11. Etobicoke Education Centre, 1 Civic Court @ 1:30. 3 groups DOS, MAC and New users. 621 7313

PEAT (PSION Enthusiasts Assoc. of Toronto) meet 2nd Wednesday, monthly at 6:30 p.m., Compusys office 1370 Don Mills Rd., 3rd floor, (416) 535-1888, ext 3.

PERSONAL COMPUTER CLUB OF TORONTO (PCCT) meets 3rd Tuesday of each month at 7pm, North York Memorial Community Hall, 5110 Yonge St. one floor below the Central Library $5 for non-members. Call (416) 833-6971 BBS (416) 536-6384

TAF (Toronto Atari Federation) meets 3rd Wednesday of each month at 7:30pm, North York City Centre Library, Paper Room. Free for members, $2 for non-members. Write: 5334 Yonge St., Ste 15 Willowdale, ON M2N 6M2 Call (416) 425-5357 BBS (416) 461-0900. WWW http://www.io.org/~schrist/taf.html

THE INTERNATIONAL PROGRAMMERS GUILD (IPG) meets every second Monday 7pm, Masquerade restaurant, 32 Wellington St. E. Toronto. Call (905) 812-1717

TORONTO OS/2 USER'S GROUP meets 2nd Thursday of each month, 7-10pm, IBM Canada Building, 3500 Steeles Ave E in the auditorium. Free. Call (416) 299-3410 E-mail: to2@io.org www.http://www.io.org/~to2

PAF Users Group meets Sat Jan.11 at the Etobicoke Education Centre, 1 Civic Court, 1:30pm. 3 Groups: DOS MAC and New users Call 621 7313

THE MISSISSAUGA COMPUTER CLUB meets the first Wednesday of every month at the Burnhamthorpe Community Centre, 1500 Gulleden Dr. 1 block west of Dixie and one block south of Burnhamthorpe, at 7:30pm. You may reach the club through the BBS at 905-270-3972 or by Email at [illegible]

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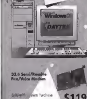

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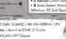

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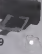

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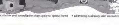

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TCP 12/1996

Troubled times at Novell

Continued from page **116**

difficult forays into the PC business including many failed desktop PC entrants (including a pioneering machine back in 1984 that featured both a touch screen and early use of 3.5-inch floppy diskettes), portable computers and non-IBM-compatible DOS machines.

But what about the products?

If Novell was as good at quickly producing new network products as it is in making announcements about them the company might never have faced its current troubles Since mid August there has been a torrent of new product missives from the Novell public relations machine the most important of which were those relating to Novell's transformation of NetWare into IntranetWare

At the beginning of October for example the company revealed that it had begun shipping IntranetWare to its worldwide customer base a whole week ahead of its previously announced shipping date. The latter is a key issue for Novell which suffered far too many industry slings and arrows for long delays in previous updates to NetWare.

Novell says IntranetWare "marks the evolution of NetWare into a full-service intranet and Internet access platform solution for businesses of all sizes." Cynics suggest it is Novell's way of trying to hop on the fast moving intranet bandwagon, even to the extent of sacrificing its chief product

But Novell claims that this networking solution will actually enable more than 55 million NetWare customers to preserve their existing network investment while evolving their business networks to embrace Internet standards and technology The company says it also fulfills Novell's promise to combine its networking technology with key intranet functionality

One of the keys to this strategy is that it will basically cost customers nothing extra to buy IntranetWare, as opposed to basic NetWare 4.11 Although it will continue to sell NetWare 4.11 as a standalone product, IntranetWare and NetWare 4.11 will be available at "pricing and licence stratification" similar to NetWare 4.1

In addition, the company says all standard upgrades to NetWare 4.1 which allowed customers to upgrade to the same or a larger user licence will be replaced with like-to-like-only upgrades to IntranetWare

You'll also see cheaper licences on increasing the number of users on new or upgraded licences of IntranetWare or NetWare 4.11, where they can now buy 10-, 25- or 50-user additive licences Even more aggressively the company is offering upgrades from competitive products through its Customer Connection program

As a special incentive to encourage IntranetWare upgrades, Novell is also offering limited-time promotional upgrade prices to NetWare 4.x customers who wish to migrate These special promotional prices will be available through Jan. 7

IntranetWare?

Novell says IntranetWare incorporates all of the networking services of NetWare 4.11, such as Novell Directory Services (NDS), Symmetric Multi Processing (SMP) and core file and print services—with new intranet and Internet capabilities

It says that these solutions include a high-performance NetWare Web Server 2.5 file transfer protocol (FTP) services, the Internet-standard method for allowing users to download files on remote servers via the Internet Netscape Navigator, an IPX-to-IP gateway to provide IPX users with access to all IP resources including World Wide Web pages, and integrated wide-area routing to connect geographically dispersed local area networks to a corporate intranet or to the Internet.

The GroupWise connection

And following its Sept 12 launch of GroupWise 5 Novell further promised that in early 1997 GroupWise will deliver "an important advance to accelerate the deployment of corporate intranets."

The company claims that GroupWise will "transform" the creation and editing of Web documents and the granting of access rights from specialized IS management functions to tasks that users across an organization can easily perform.

Novell pledges that intranet users will be able to search full-text indexes of documents rather than just uniform resource locators (URLs), and that GroupWise users will be able to create and edit documents and access rights that are automatically reflected on the Web ❑

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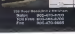

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1MB 64-bit video card
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33,600 bps fax data modem
Voice mail & telephony software
Keyboard, mouse, & pad
PLUS Christmas Bonus Bundle
Monitor not included

IPC CD•FX

Intel Pentium' processor
16 MB RAM memory
256k pipeline cache (exp. to 512k)
1.2 GB high speed hard drive
1.44 high density floppy drive
8X speed CD ROM drive
16-bit sound card
Amplified external speakers
PCI SVGA video card 1 MB
FM receiver/tuner radio card
33,600 bps fax data modem
Voice mail & telephony software
Keyboard mouse & pad
Monitor not included

Christmas 1996 Bonus Bundle is included only with the IPC CS•FX systems

IPC CS•FX

120MHz Pentium' processor	$1,899	Only $76 per month*
166MHz Pentium' processor	$2,399	Only $96 per month*
200MHz Pentium' processor	$2,599	Only $104 per month*

IPC CD/FX

120MHz Pentium' processor	$1,599	Only $64 per month*
133MHz Pentium' processor	$1,699	Only $68 per month*
166MHz Pentium' processor	$1,999	Only $80 per month*

IPC systems include:

- 3 Year parts & labour warranty
- 1st year on-site service'
- Toll-free tech support
- On-the-spot financing

See the IPC CS•FX and IPC CD/FX at an authorized IPC dealer near you, or for information call: 1.800.567.7413

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PERSONAL COMPUTERS

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